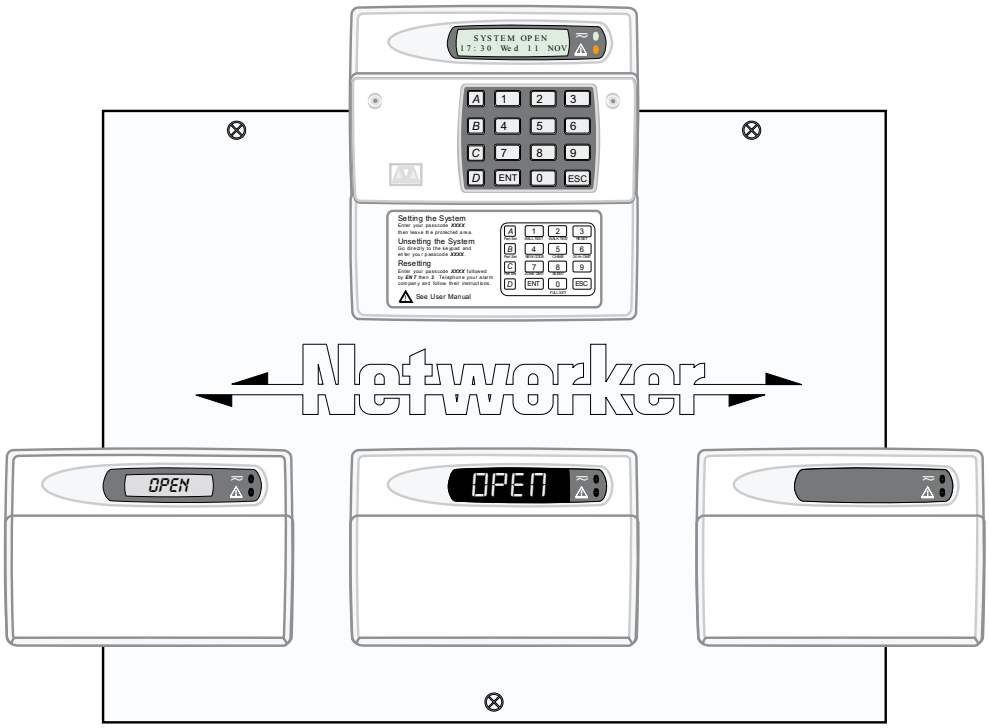
MENVIER SECURITY

TS790 & TS900

Intruder Alarm Control Panels



Installation & Programming Manual

COOPER Menvier

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Overview

Introduction

The TS790 and TS900 alarm control systems have been designed to suit medium to large installation sites. The TS900 system can be expanded from 10 to 56 zones, whereas the TS790 is expandable from 10 to 16 zones. Both systems feature "up" and "down" line loading, allowing the system to be remotely programmed or interrogated via the telephone line and a P.C.

Complex site requirements such as multi-ward setting can be achieved, as both systems are capable of being broken down into 4 separately controlled areas (Wards) so that the premises or parts of the premises can be controlled independently.

Control Panel

The control panel is the controlling unit for the system, it has a power supply and connections for a standby battery. It has the following facilities:

- 8 programmable detection circuits
- Bell and strobe outputs
- 4 programmable outputs (1 x Voltage free contacts and 3 high current transistorised)
- 8 programmable digicom/RedCARE outputs
- A connector for a Menvier plug-on digicom or digi-Modem
- Extension loudspeaker output
- All system program information and the 700 event log is stored in a removable non-volatile memory (NVM)

System Architecture

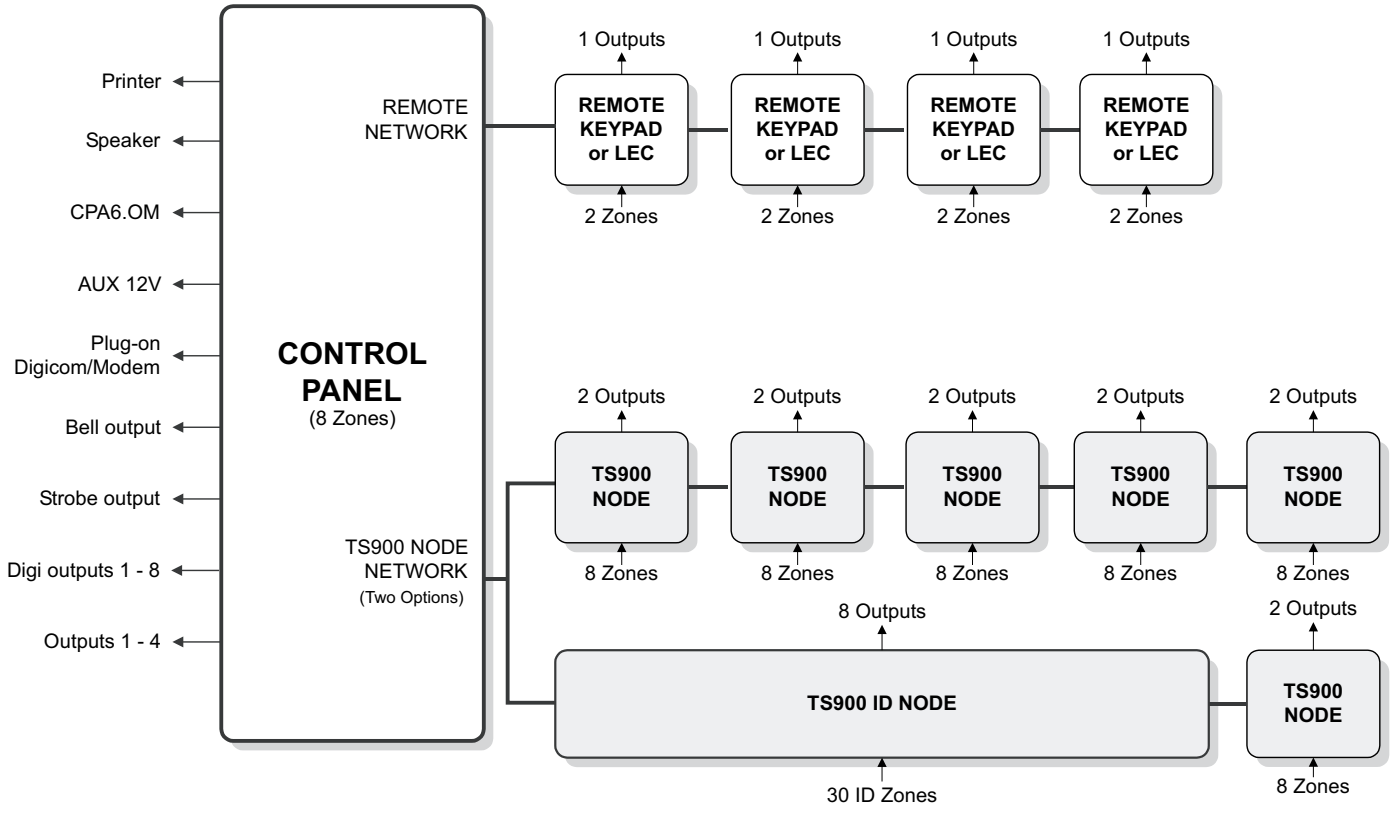


Figure 1. TS790 & TS900 System Architecture

Remote Keypads

Up to 4 remote keypads can be connected to the control panel. Each remote keypad has two detection circuits and a single switched -ve output. There are four types of remote keypads that can be used:

32 Character LCD (NETLCD)

The NETLCD remote keypad has a backlit 32 character super-twist Liquid Crystal Display (LCD) and a backlit tactile rubber keypad. When using the LCD Keypads the text for user codes, part setting modes and circuit identification can be programmed to make the operation and programming of the system easier.

8 Character Starburst (NETSTAR)

The NETSTAR remote keypad has a backlit 8 character starburst display (LCD) and a backlit tactile rubber keypad.

4 Character LED (NETLED)

The NETLED remote keypad has a 4 character LED display and backlit tactile rubber keypad. When using the LED remote keypads, text cannot be programmed but all other system functions are available.

Remote Arming Station (NETARM)

The Remote Arming Station only allows setting and unsetting of the system. The unit has two indicator LEDs, the "Power LED" and a programmable "Function LED" (the "Function LED" may be programmed as "Fault" or "Area Set" etc.).

TS900 NODE

The TS900 Node provides eight programmable detection circuits and two programmable outputs (Can only be used on the TS900).

ID Node (TS900.IDNODE)

The TS900 ID NODE can be used as an alternative to the standard TS900 Node. It provides a single ID Detector Loop for connection to 30 ID devices and 8 programmable outputs. Several configuration options allow it to be used on its own or with existing TS900 Nodes. *(Can only be used on the TS900.)*

TS700 LEC

The Local Expansion Card (LEC) provides two programmable detection circuits and one programmable output.

Specifications

General

Zones	TS790 - 10 to 16
	TS900 - 10 to 56
Expansion	2 zone LECs and/or Keypads
	8 zone Nodes (TS900 only)
	30 zone ID Node (TS900 only)
Outputs (Panel)	12 + 8 via plug-on digicom
Keypad types	32 Character LCD
	8 Character Starburst LCD
	4 Character 7-segment LED
	LED Arming station

Electrical

Mains Input	230 ±10% 50Hz ±5%
Control Panel	220mA (normal)
	300mA (alarm)
Battery	12V 7Ah Sealed Lead Acid
Power Supply	1.5A
LCD keypad	50mA (normal) 60mA (alarm)
Starburst keypad	50mA (normal) 60mA (alarm)
LED keypad	60mA (normal) 70mA (alarm)
Arming Station	30mA (normal) 40mA (alarm)
TS900 Node	60mA (normal) 60mA (alarm)
ID Node	80mA (with 1 device)
	160mA (with 30 devices)
TS700 LEC	30mA (normal) 30mA (alarm)

Physical

Control panel	384(W) x 312(H) x 95(D)mm
	4.9Kg
Remote Keypads	150(W) x 104(H) x 30(D) mm
	282g
Nodes (all types)	128(W) x 182(H) x 34(D) mm
	370g
TS700 LEC	142(W) x 82(H) x 36(D) mm
	213g
Environment	-10 to 55°C

System Installation

Cable Routing

When installing cables, the following should be noted:

- ☞ *Screened cable may prove necessary if the Network is run adjacent to cables that produce R.F. or are switching high current loads, e.g., mains, telephone, computer.*
- ☞ *Ensure that all Network and detection circuit cables are kept clear of mains supply cables, telephone cables, R.F. cables and cables supplying bells or sounders.*
- ☞ *Mains power supply cables to the system must be connected to an un-switched fused spur that cannot be accidentally switched off, and must enter the housing via its own cable entry point.*
- ☞ *In larger installations it may prove necessary to fit remote power supplies to overcome excessive voltage drops in the cable runs. It is recommended that the Menvier 519XB is used in these instances as it can be fault monitored by the control panel.*

Node Network Wiring (TS900 Only)

Nodes require a 4 core cable for interconnection, and may be connected in a "daisy-chain" or "star" configuration. The distance between each Node must not exceed 100 metres. Power for detectors is provided by the Aux +/- terminals. On installations that utilise the Node outputs to drive sounders and strobes it may be necessary to fit a remote power supply (Figure 2) to prevent over loading of the control panel power supply.

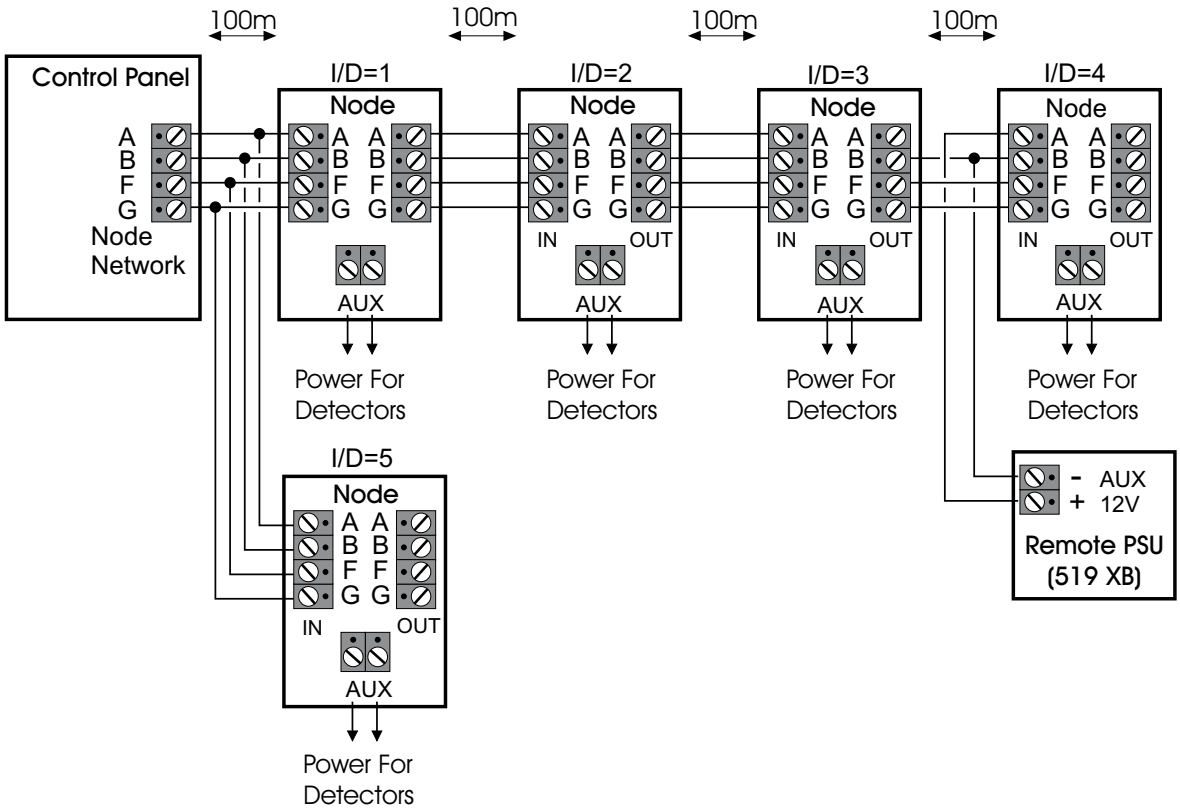


Figure 2. TS900 Node Network Wiring

Remote Network Wiring

Devices on the "Remote Network" require a 6 core cable for interconnection, and may be connected in a "star" or "daisy-chain" configuration. The distance to the furthest device from the control panel must not exceed 100 metres. Power for detectors are provided by the A and B terminals (Figure 3).

Combined Network Wiring (TS900)

On some installations it may be desirable to have a remote keypad connected after the Nodes. This can be achieved by using an eight core cable from the control panel and connector strips within the Node and remote keypads (Figure 4).

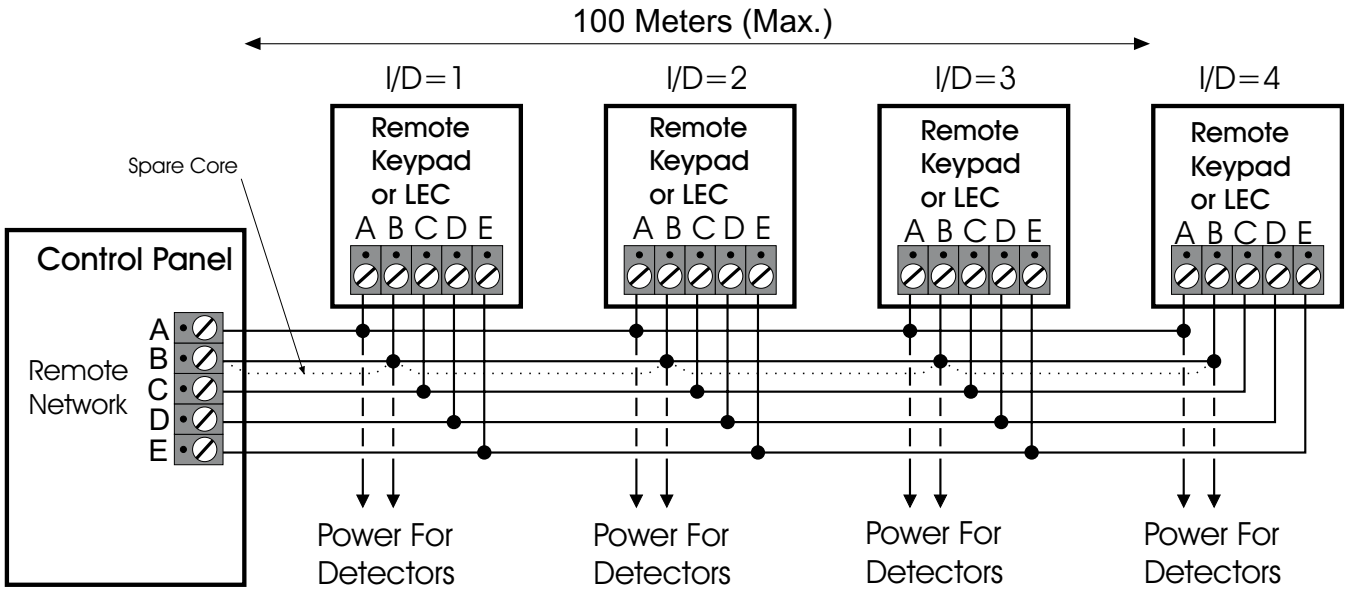


Figure 3. TS790 & TS900 Remote Network Wiring

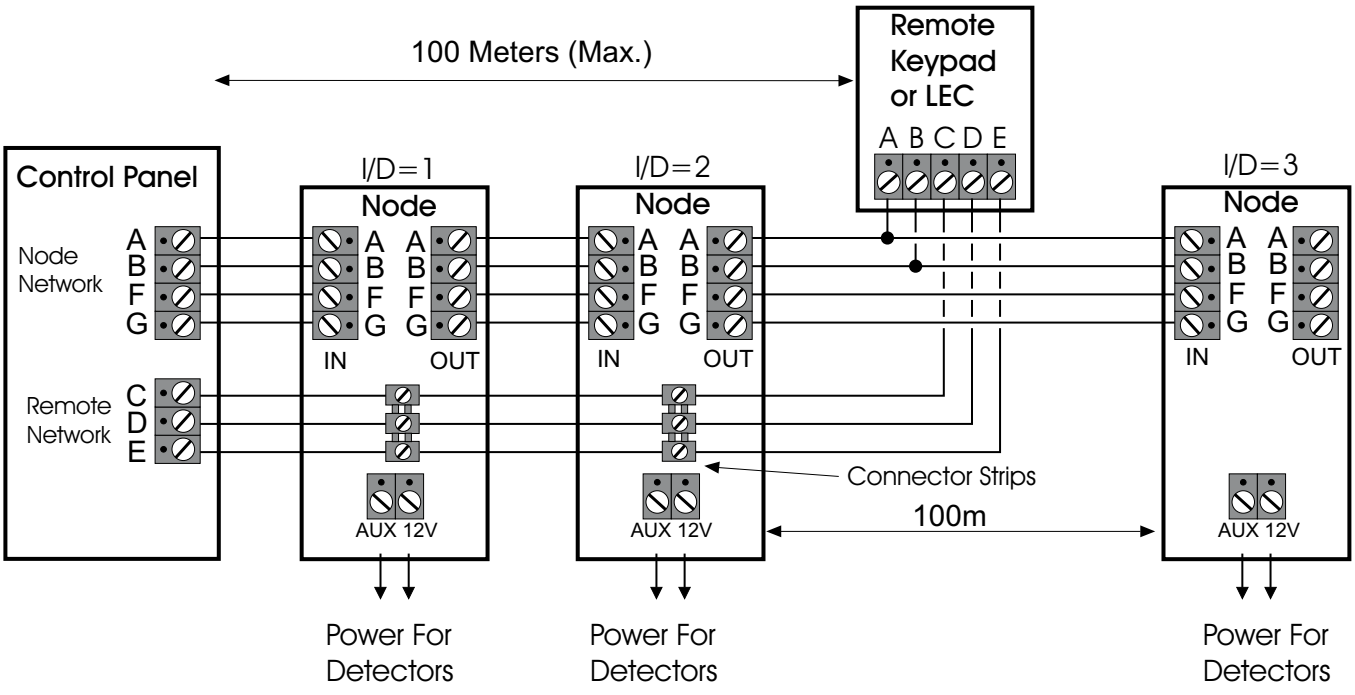


Figure 4. TS900 Combined Network Wiring

Control Panel Installation

Proceed as follows:

1. Open the control panel by removing the three screws from the front cover. Remove the cover by sliding it up slightly to disengage the bottom clip, disconnect the earth bonding cable from the spade connection near the transformer.
2. Note the position of the cable entries as follows:
   - **(a)** Ten 20mm cable entries for detection, alarm and remote keypad cables.
   - **(b)** A 20mm cable entry for mains (240V) below the mains input terminal block.

   ☞ *The mains cable must enter the control panel through its own cable entry and must not be mixed with other cables.*
3. Hold the control panel back box in the required position (keyhole to the top) and mark the centre of the keyhole position. Remove the back box, drill and plug the hole.
4. Screw a No 10 screw into the plugged hole. Re-position the back box and mark the remaining two securing holes. Remove the back box, drill and plug the holes.
5. Re-position the back box and pass all cables into the base via the appropriate cable entries, remembering to fit grommets where necessary.
6. Secure the back box using not less than 30mm x No 10 screws through the three securing holes.
7. If required install and connect the following:
   - **(a)** Stand alone digicom or RedCARE STU.
   - **(b)** Plug-on digicom type DC54, DC58 DC58M.
   - **(c)** Output modules type CPA6.OM.
   - **(d)** Printer type DATAC or serial RS232 via a printer adapter (MPA/DCI).
   - **(e)** Relay module type RM.3A.

   ☞ *When replacing the cover, always ensure that the earth bonding lead is connected to the spade connection on the front cover.*

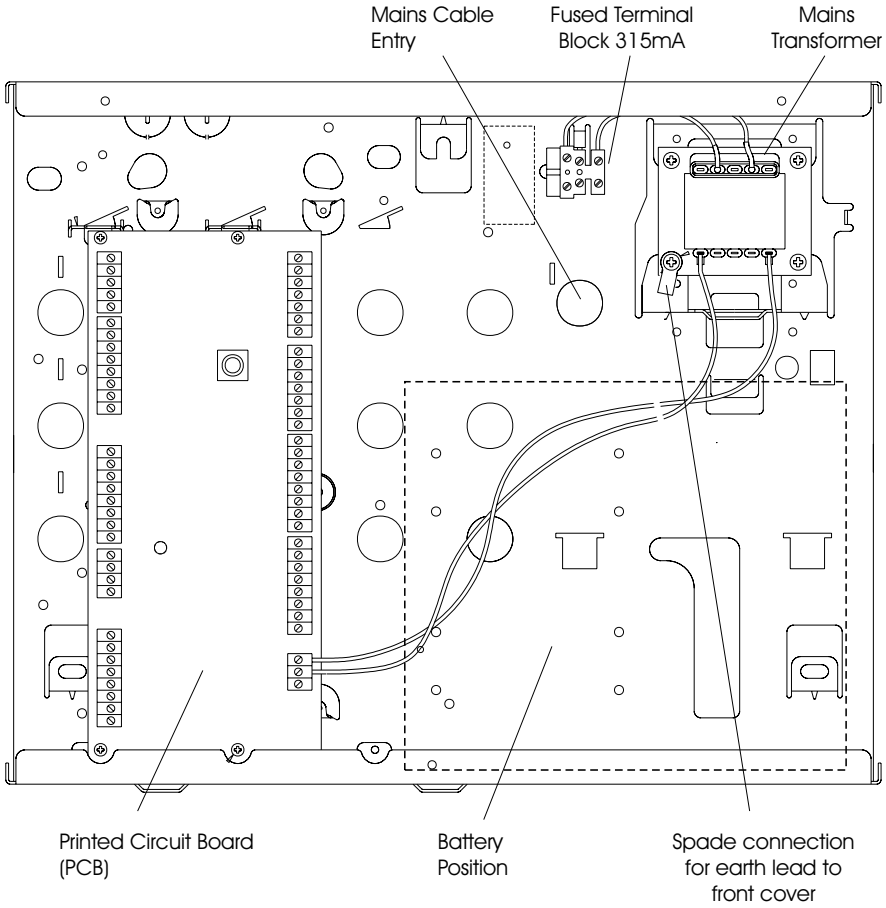


Figure 5. TS790 & TS900 Control Panel Layout

Control Panel PCB Layout

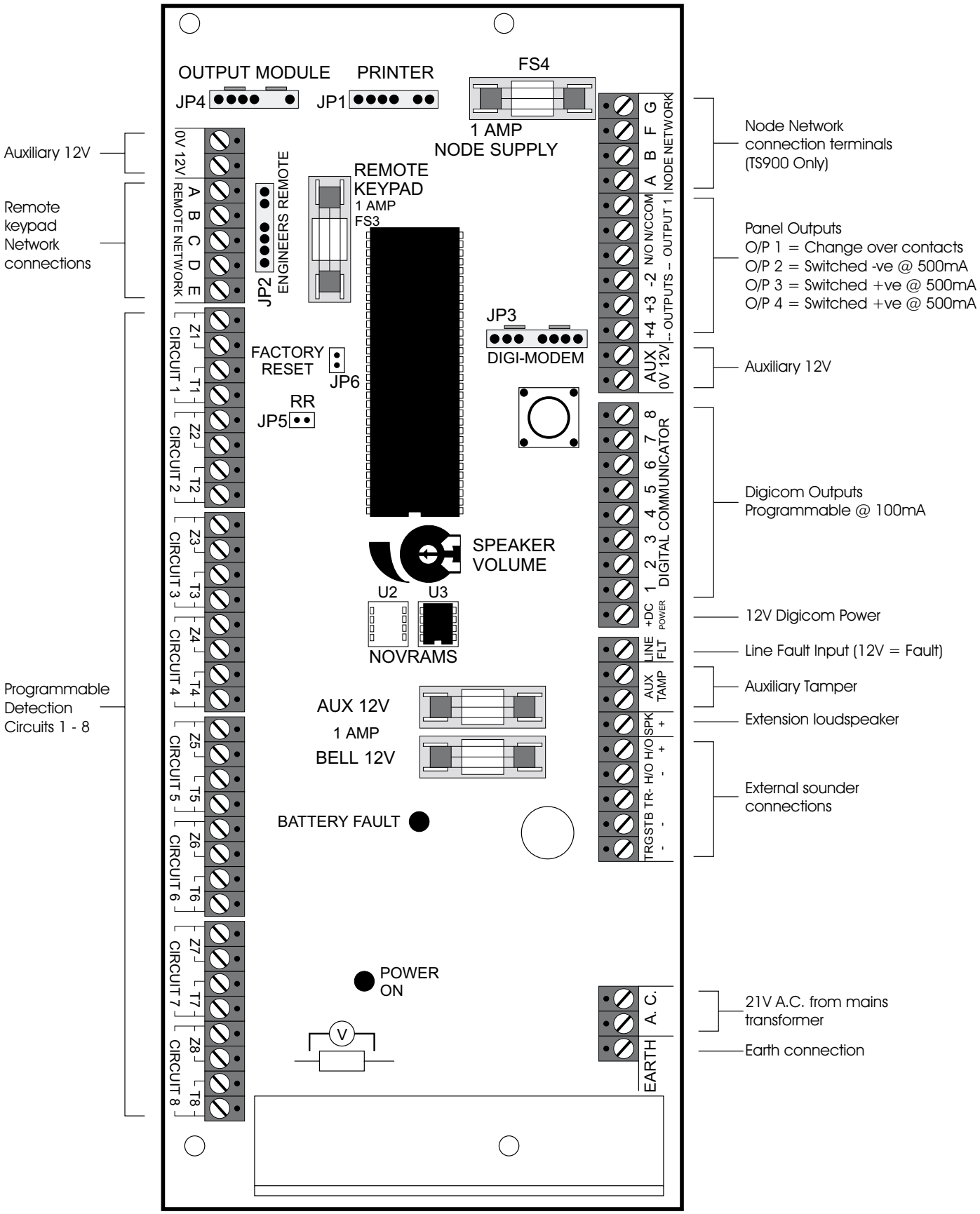


Figure 6. TS790 & TS900 Main PCB

Connection Terminals & Indicators

The main PCB has the following "Jumper Plugs" (JP) and indicator LEDS:

JP1 PRINTER
This 6-pin plug is used for connecting to either a CPA6.P printer or a standard RS232 printer via the MPA printer adaptor.

JP2 ENGINEERS REMOTE
An Engineers remote keypad may be temporally connected to this 6-pin plug to allow programming and testing to be carried out at the control panel.

JP3 DIGI-MODEM
A plug-on digicom or digi-Modem may be connected to this 7-pin plug to allow panel alarm information to be transferred to a central station. The digi-Modem is used for remote communication and programming via a P.C. The PCI lead also connects to this plug when using the P.C. for direct communication with the control panel.

JP4 OUTPUT MODULE
Output Modules type CPA6.OM may be connected to this 5-pin plug, and are used to provide switched -ve outputs to LEDs/relays etc. The outputs may be programmed such that they will mimic circuit activations or activate only when a circuit causes an alarm condition.

JP5 RR
If the panel is programmed as "Engineer Reset", shorting the "Remote Reset" (RR) pins after an alarm condition will cause the panel to reset. These pins could be connected to the "Control" output on a RedCARE STU so that the central station may provide a "Remote Reset" facility.

JP6 FACTORY RESET)
If these pins are shorted during power-up all system parameters are reset to their factory default settings. If the engineer's passcode is lost or forgotten it can be reset to 1234 without loosing any other program data. The procedure for resetting the engineer's passcode is described on page 51.

VR1 SPEAKER VOLUME
When an extension loudspeaker is connected to the control panel terminals the volume of the advisory tones may be adjusted using this control.

☞ *Alarm tones are always at full volume.*

U2/3 NOVRAMS
A removable non-volatile memory (NVM) device that stores all system program parameters and the 700 log events. The event log can be expanded to 1800 events when the second NVM(U2) is fitted. Order code PP5.MEMKIT (5 x NVMs).

LED1 POWER ON
This LED indicates that the system power (mains or battery) is healthy.

LED2 BATTERY FAULT
If the system battery is incorrectly connected to the control panel or the battery voltage level is below 4 Volts then the "Battery Fault" LED will illuminate. The fault LED will only extinguish when the battery has been correctly connected or replaced.

V SYSTEM CURRENT CONSUMPTION
The system current consumption may be calculated by measuring the Voltage across this test point on the main PCB. Using a Voltmeter set to a low Voltage range measure the Voltage across the test point and multiply the reading by 10 to give the Total system current consumption i.e., a reading of 70mV = 700mA.

Mains Connection

The mains supply is connected to a 3 way "Euro Type" fused terminal block, which is fitted with a 315mA fuse. All electrical connections should be carried out by a qualified electrician and must comply with the current IEE regulations.

☞ *To comply with european regulations the supply should be fed from a readily accessible disconnect device, e.g. un-switched fused spur fitted.*

☞ *When making mains connections it should be ensured that if the cable slips in such a way as to place a strain on the conductors, the protective earthing conductor will be the last to take the strain.*

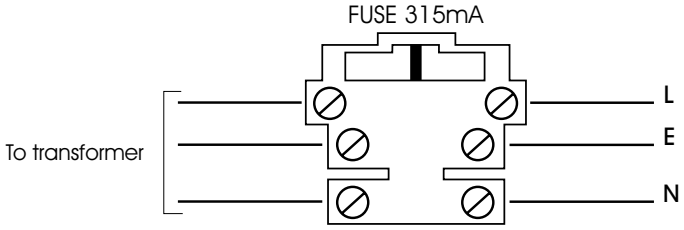


Figure 7. Mains Supply Connections

Battery Connection

A 7Ah battery must be fitted to the system to allow it to function during a mains fail condition. The TS790/TS900 is equipped with a "Battery Protection" circuit so that if a battery is accidentally reverse connected or its voltage is below 4V, the "Battery Fault" LED illuminates. To clear the fault simply reconnect or replace the battery as appropriate.

Remote Keypads

Four types of remote keypads can be used on the system, however, only the TS900 remote keypad can be used for programming text information. Any combination of remote keypad may be used on the same system if desired.

NETLCD Remote Keypad

The NETLCD remote keypad has a 32 character backlit Liquid Crystal Display (LCD)

NETSTAR Remote Keypad

The NETSTAR remote keypad has a 8 character backlit Starburst Liquid Crystal Display (LCD).

NETLED Remote Keypad

The NETLED remote keypad has a 4 character LED display.

NETARM Remote Arming Station

The NETARM remote arming station does not have a display, therefore it is designed to only be used where setting, part setting and unsetting of the system is required.

PCB Layouts & Connections

❶ Detection Circuits.
Each remote keypad has two programmable detection circuits.

❷ Loudspeaker Volume.
For adjusting the volume of a speaker wired to the remote keypad (NETLCD only).

❸ LED Mimic.
If this jumper link is set to the "enabled" position, the red (⚠) LED on the keypad will be "ON" when the keypad output is active.

❹ Remote I/D.
Used to select the remote keypads address. (ENG = Engineer).

❺ Ward Sounder Control.
If this jumper link is set to the "disabled" position, the remote keypad sounder will follow the control panel speaker output. If this link is set to "enabled", the remote keypad sounder will only activate when the panel speaker and the output on the remote keypad are active at the same time.

❻ Loudspeaker Output.
This terminal can be connected to a single 16 Ω Loudspeaker (NETLCD only).

❼ Network Connections & O/P.
Terminals A to E are used to connect the remote keypad to the control panel network. The O/P terminal is the programmable output.

❽ Tamper Switch.
Remote Keypad case tamper

❾ ENT Key Disable.
If the "ENT" key is enabled the remote keypad can be used to set/unset and access all user menus. If the "ENT" key is disabled the remote keypad can only be used to set and unset the system.

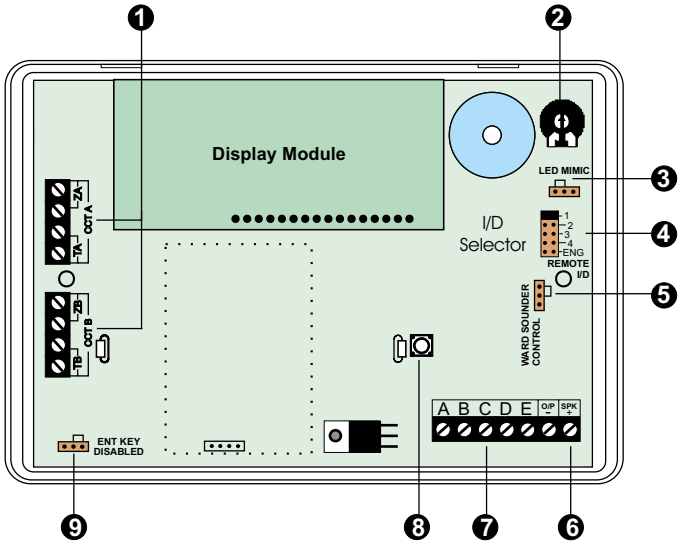


Figure 8. NETLCD, NETLED & NETARM PCB Layout

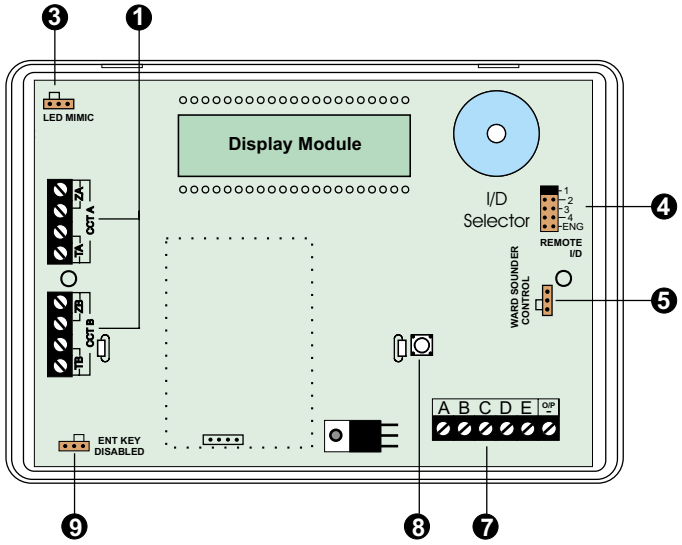


Figure 9. NETSTAR PCB Layout

Installation Procedure.

☞ *Always ensure that all power (mains and battery) is removed before making any connections to the remote keypad.*

1. Separate the cover and base by using a screwdriver to push 2 of the clips (top or bottom) inward from the base indents, then lift the cover assembly, noting that the PCB is fixed to the under side of the cover.
2. Hold the base in position (keyhole to the top) and mark the three securing holes, drill and plug the wall as required. Pass all the cables into the base via the cable entry points as appropriate and secure the base to the wall.
3. Connect "Remote Network" and detection circuit cables to the appropriate terminals, *see Figure 8*.
4. Set the I/D selector jumper link to the required position:

I/D Selector	Circuit A	Circuit B	Panel Output
1	09	10	5
2	11	12	6
3	13	14	7
4	15	16	8
ENG/NULL	N/A	N/A	N/A

- No two remote keypads or LECs should have the same I/D.
- If the I/D is set to "ENG" the remote keypad will function as an Engineer's keypad allowing it to be plugged onto the control panel so that system programming and testing may be carried out (*see Engineer's Keypad*).

5. If the remote keypad has a "ENT" key enabled/disable link it can be used to limit the functionality of the remote keypad. If the "ENT" key is enabled the remote keypad can be used to set/unset and access all user menus. If the "ENT" key is disabled the remote keypad can only be used to set and unset the system.
6. If the remote keypad has a "Ward Sounder Control" link it can be used to make the remote keypad sounder follow the programmable output. When the link is set to the disabled position the sounder responds as normal.

When the link is set to the enabled position the sounder is only enabled when the remote keypad programmable output is active. For example, to make the keypad ward respective for ward A, program the output on the remote keypad to "Sounder Control A" (type 064) and set the "Ward Sounder Control" link to the enabled position.

7. Finally clip the remote keypad cover onto the base being careful not to trap any cables or to obstruct the tamper switch.

Engineer's Keypad

Normally all system programming will be carried out from one of the installed remote keypads, however sometimes it may be more convenient to program the system at the control panel. This can be achieved by using an "Engineers Keypad" which is temporarily plugged on to the control panel (JP2). To convert a standard remote keypad to an "Engineers Keypad" an Engineer's interface lead is required which can be obtained from your supplier (P/No. NETEKI).

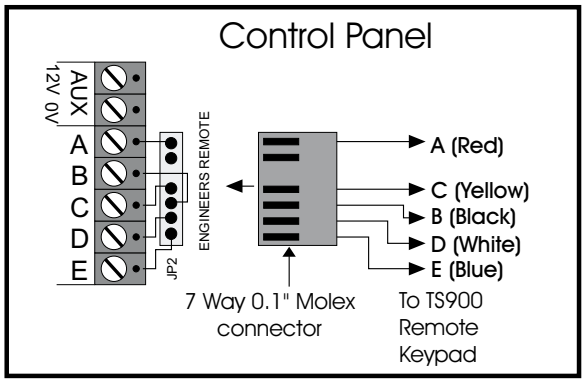


Figure 10. Engineer's Keypad Connections

TS900 Node Installation (TS900 Only)

The TS900 NODE allows the facility to add an extra eight programmable detection circuits and two programmable outputs. The Nodes are connected on the "Node Network" and up to five may be connected to the TS900 system.

☞ *Always ensure that all power (mains and battery) is removed before making any connections to the Node.*

1. Separate the cover and base by using a screwdriver to push 2 of the clips (left or right) inward from the base indents, then lift the cover clear.
2. If the Node is being fitted inside the control panel you may remove the Node PCB from its base and secure it to base of the control panel using self adhesive feet. If required, the tamper switch may also be disabled by fitting the jumper link across JP2, *see Figure 11*.
3. If the Node is being fitted outside the control panel, hold the base in position and mark the four securing holes. Drill and plug the wall as required, then pass all cables into the base via the cable entry points as appropriate. Secure the base to the wall using the appropriate fixing screws.
4. Connect "Node Network" cables and detection circuit cables to the appropriate terminals, *see Figure 11*.
5. Set the I/D selector jumper link to the required position:

		Node I/D				
		1	2	3	4	5
CIRCUITS	A	17	25	33	41	49
	B	18	26	34	42	50
	C	19	27	35	43	51
	D	20	28	36	44	52
	E	21	29	37	45	53
	F	22	30	38	46	54
	G	23	31	39	47	55
	H	24	32	40	48	56
OPs	+A	1	3	5	7	9
	-B	2	4	6	8	0

- No two NODES should have the same I/D.
- The NODE I/D selector DOES NOT have to be set sequentially but it is advisable so as to aid fault finding and programming.

6. Finally clip the Node cover onto the base being careful not to trap any cables or to obstruct the tamper switch.

TS900 Node Layout

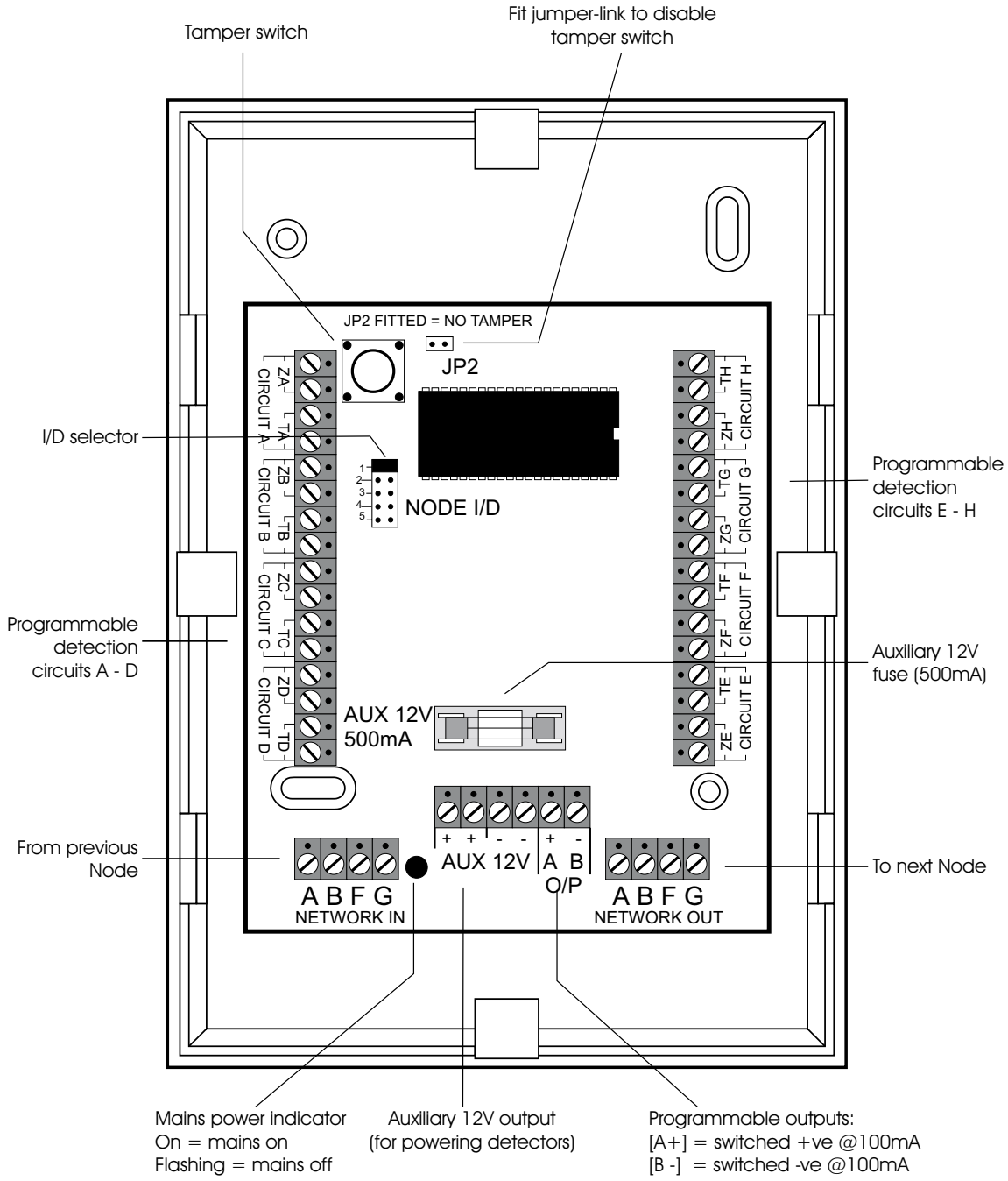


Figure 11. TS900 Node Layout

TS700 LEC Installation

The TS700 LEC (Local Expansion Card) is connected to the "Remote Network" and provides two additional programmable detection circuits and a programmable output. The "Remote Network" may have up to three LECs connected, as the system will always require at least one remote keypad.

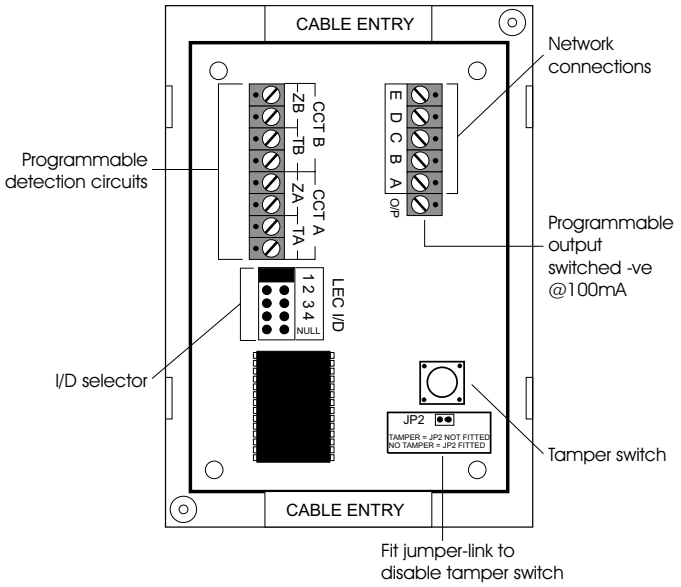


Figure 12. TS700 LEC Layout

> ☞ *Always ensure that all power (mains and battery) is removed before making any connections to the LEC.*

1. Remove the cover from the base and carefully remove the PCB.
2. If the LEC is being fitted inside the control panel you may remove the LEC PCB from its base and secure it to base of the control panel using self adhesive feet. If required, the tamper switch may also be disabled by fitting the jumper link across JP2, *see Figure 12*.
3. If the LEC is being fitted outside the control panel, hold the base in position and mark the two securing holes. Drill and plug the wall, then pass all cables into the base via the cable entry points. Secure the base to the wall using the appropriate fixing screws.
4. Connect "Remote Network" cables and detection circuit cables to the appropriate terminals, *see Figure 12*.
5. Set the I/D selector jumper link to the required position:

I/D Selector	Circuit A	Circuit B	Panel Output
1	09	10	5
2	11	12	6
3	13	14	7
4	15	16	8
NULL	N/A	N/A	N/A

   - No two LECs or remote keypads should have the same I/D.
   - DO NOT set the I/D selector to the "NULL" position.
6. Finally clip the LEC cover onto the base being careful not to trap any cables or to obstruct the tamper switch.

Wiring Detection Circuits

All detection circuits may be wired as "End Of Line" (EOL) or "Double Pole" (DP). Both methods can be used on the same equipment.

Double Pole

The DP method requires the following:

- The detector alarm and tamper contacts are connected to the zone and tamper terminals respectively.
- The combined alarm and tamper loop resistance must be less than 100 Ohms.
- The maximum number of detection devices allowed in a circuit is ten.
- Normally open devices such as pressure pads and exit terminator buttons are connected between the zone and tamper terminals.
- If the detection circuit is not used links can be fitted across the zone and tamper loops or programmed as Not Used.

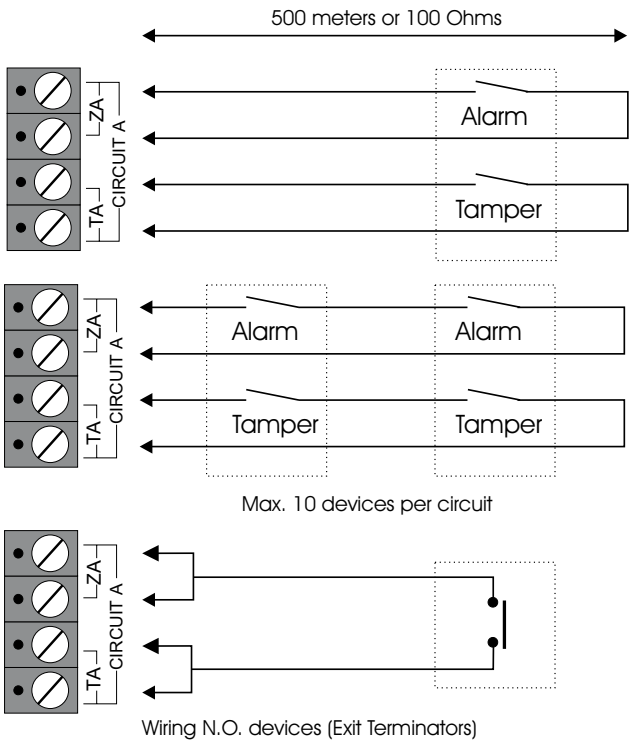


Figure 13. Double Pole Wiring

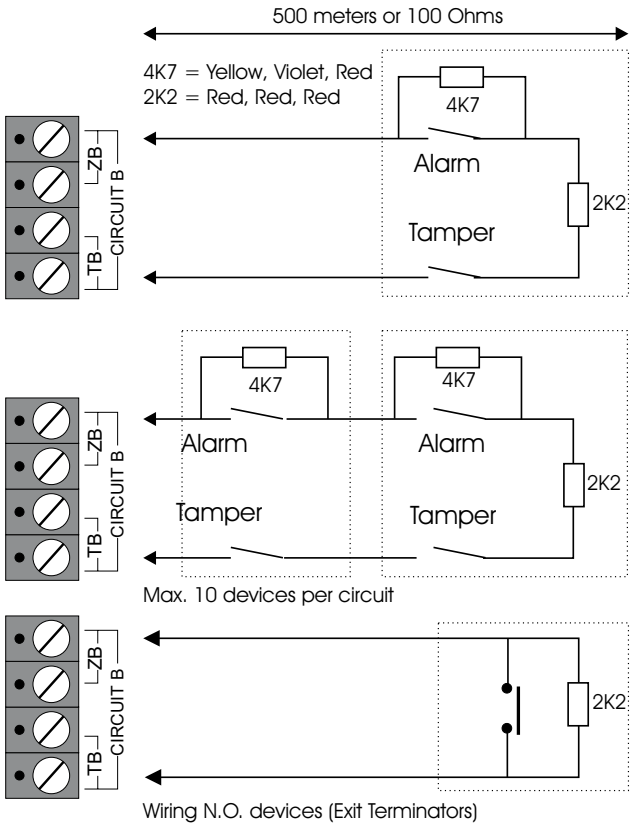


Figure 14. End of Line Wiring

End Of Line

The EOL method requires the following:

- The detector alarm contacts must have a 4K7 shunt resistor fitted.
- A 2K2 End of Line (EOL) resistor must be fitted at the point in the circuit furthest from the control panel.
- Loop resistance with the EOL resistor shorted must be less than 100 Ohms.
  - The maximum number of detection devices allowed in a circuit is ten.
  - Normally open devices such as pressure pads and exit terminator buttons are connected across outer terminals
  - If the detection circuit is not used links can be fitted across the zone and tamper loops or programmed as Not Used.

External Sounder Connections

The following terminals have been provided to allow connections to an external sounder:

H/O - This is used to provide a permanent -ve hold off to external sounders, strobes etc.

H/O + This is used to provide a permanent +ve hold off to external sounders, strobes etc. It is protected by a 1 Amp fuse (Bell 12V).

TR - This is the negative tamper return connection from the siren or bell.

STB - This is the strobe output which will switch to 0V on alarm and is rated at 500mA. Connect the other side of the strobe to the H/O +.

TRG - This is the bell trigger output which will switch to 0V on alarm and is rated at 500mA. This output can be programmed for SAB or SCB operation, as follows:

SAB: TRG - will switch to 0V on alarm and will provide a maximum of 500mA.

SCB: TRG - will provide a negative hold off (500mA), which is removed on alarm.

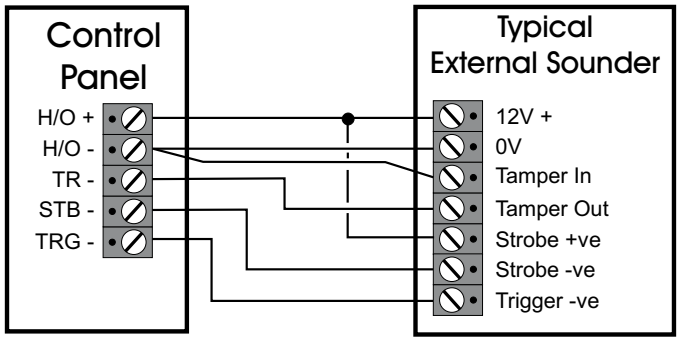


Figure 15 External Sounder Connections

Installing an External Sounder from a Node

The TS900 Node has two programmable outputs, these can be utilised to drive an external sounder. However, it is recommended that a remote power supply is fitted next to the Node in order to provide sufficient power for the external sounder. A relay module such as the Menvier RM3A is also required to drive the external sounder. The figure below shows the connection details.

Auxiliary Tamper

These two terminals provide tamper protection to auxiliary devices such as power supplies, extension loudspeakers etc. If they are not used they must be linked out.

Extension Loudspeakers

Up to two extension loudspeakers can be connected across the [SPK+] and [H/O-] terminals on the control panel PCB. The volume for the loudspeaker is controlled by VR1 "Speaker Volume".

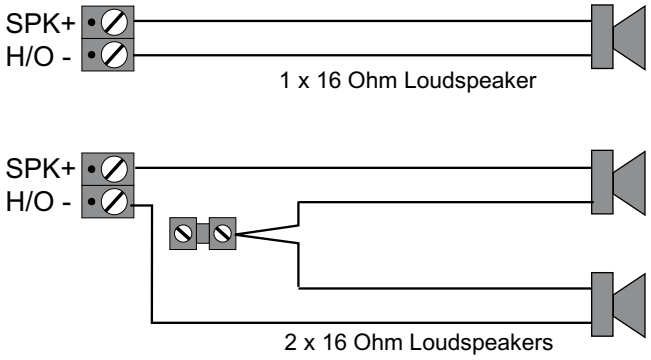


Figure 17 Loudspeaker Connections

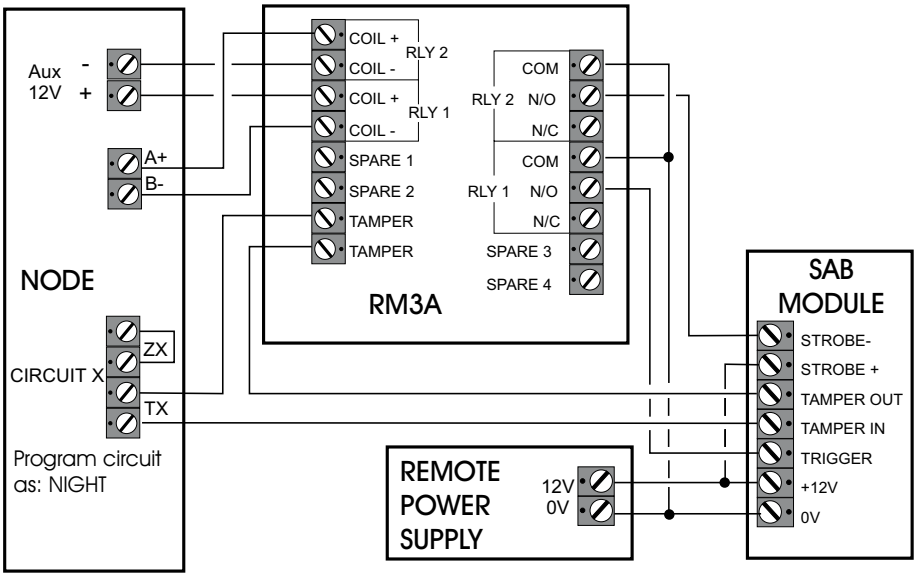


Figure 16 External Sounders Connection - Node

Digicom/RedCARE Installation

A stand alone digital communicator, RedCARE STU or Paknet interface card can be connected to the control panel using the following connections:

Digicom Outputs 1 to 8

These are the programmable digicom output connections. They are normally at +12V and switch to 0V when active. The outputs can be inverted so that they switch from 0V to +12V when active *(see System Configuration on page 31)*. Each output will source 5mA in the +12V condition and sink 100mA in the 0V condition.

+DC POWER

This provides the +12V power to the digicom. This output is un-fused and therefore should only be used if the digicom is fitted inside the control panel. The 0V supply for the digicom/STU can be picked up from any of the auxiliary 0V terminals.

LINE FLT

When this input is switched to +12V, a "Line Fault" condition is generated. A "Line Fault" condition In the unset mode will cause a "Chime" type tone to be generated every minute, which can be silenced by entering any valid passcode. A "Line Fault" condition In the set mode will cancel the "Bell Delay".

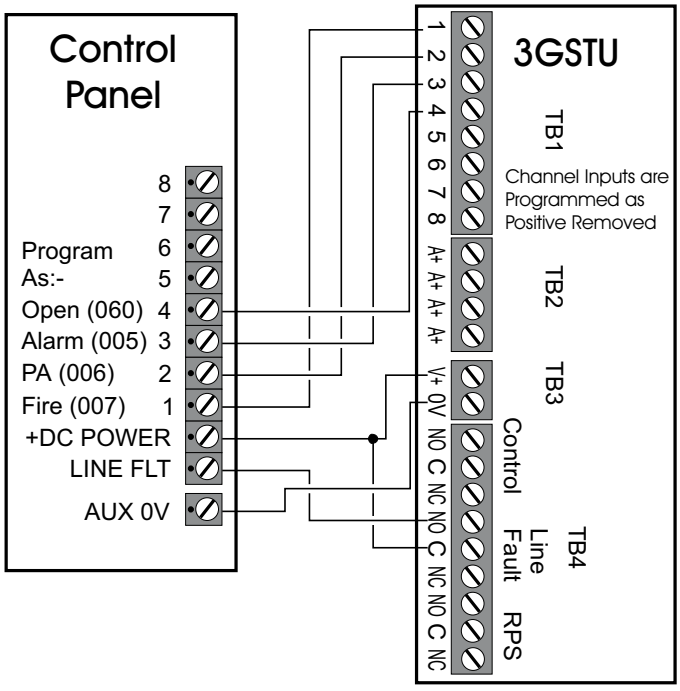


Figure 18 3GSTU RedCARE Connections

Plug-on Digicom Installation

A plug-on digital communicator DC54 or DC58 may be fitted inside the control panel to allow alarm status information to be transferred to a dedicated central station. The unit should be fitted in accordance with the installation instructions supplied with it and connected to the control panel plug DIGI-MODEM (JP3) using the lead provided with the unit, *see Figure 19*. The NVM within the digicom can be programmed via the control panel, *see page 48.*

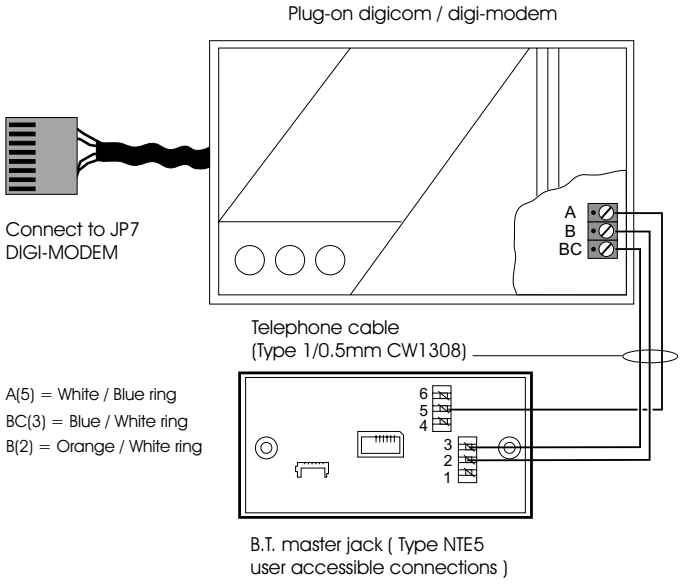


Figure 19 DC54/DC58 Connections

Plug-on digi-Modem Installation

A plug-on digi-modem DC58M may be fitted inside the control panel to allow remote interrogation and programming via a personal computer (PC). It will also function as a standard digicom (if required). The unit should be fitted in accordance with the installation instructions supplied with it and connected to the control panel plug DIGI-MODEM using the lead provided with the DC58M. The NVM within the digi-modem can be programmed via the control panel, *see page 48.* The modem data is also programmed via the control panel.

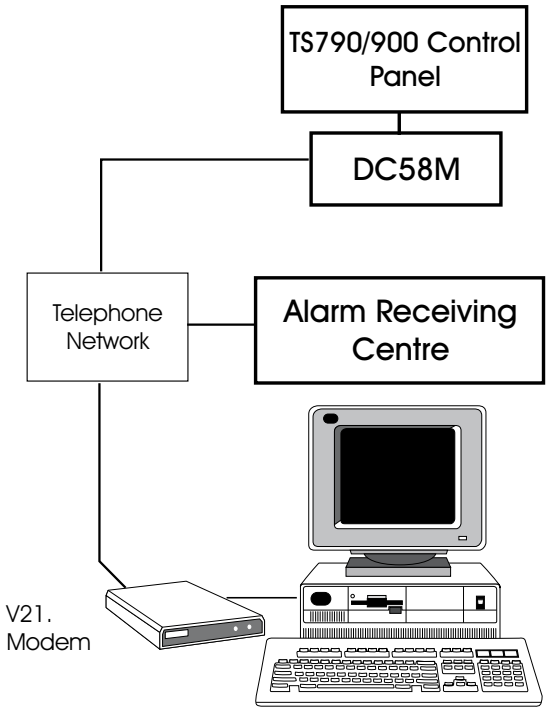


Figure 20 DC58M Digi-modem Schematic

Output Modules Installation (CPA6.OM)

Output Modules (CPA6.OM) can be used to provide a set of outputs to LEDs or relays to indicate either circuit alarm activations or circuit mimic activations. The first output module connected to the system will indicate circuits 1 to 8, the next modules will indicate circuits 9 to 16 etc. Output modules are normally fitted inside the equipment they are controlling and may be positioned up to 500 metres away from the main panel. The output module should be used and connected in accordance with the instructions provided with it.

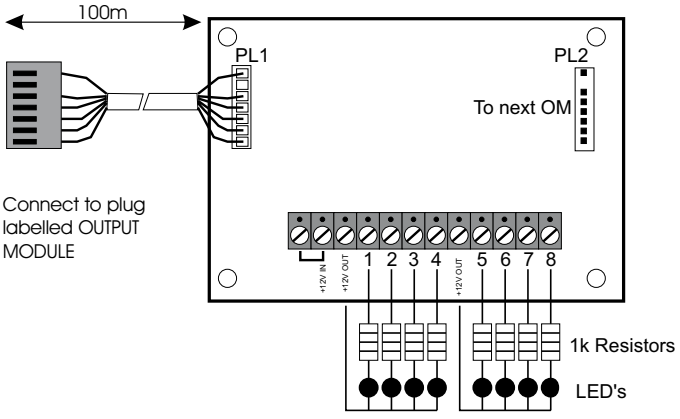


Figure 21 Output Module Connections

Connecting a Printer

The TS790/900 supports two type of printers, the CPA6 printer (no longer available) and any standard RS232 printer. When using an RS232 printer a DCI/MPA printer adaptor will be required. Menvier Security supply a DATAC printer kit which consists of a portable RS232 printer, charger unit and DCI/MPA adaptor.

Using the CPA6 Printer

1. Plug the CPA6 printer directly on to the PRINTER plug (JP1) on the main control panel PCB.
2. The printer will printout a header, when finished the system program details and event log can be printed.
3. When finished unplug the printer. If the printer is left connected events will be printed as and when they occur.

Using the DATAC / RS232 Printer

1. Plug the DCI/MPA on to the PRINTER plug (JP1) on the main control panel PCB.
2. Plug the other end of the DCI/MPA into the DATAC or RS232 printer.
3. In order for the printer to work correctly ensure the printer is set to the following:

Baud rate	= 4800
Parity	= None
Start bits	= 1
Stop bits	= 2
Data bits	= 8
DTR	= Normal

4. When set-up correctly the system program details and event log can be printed.
5. When finished unplug the MPA/DCI. If the printer is left connected events will be printed as and when they occur.

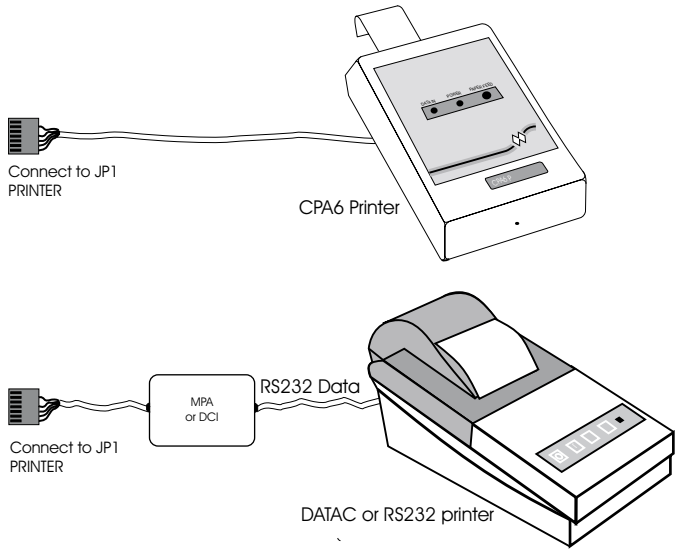


Figure 22 Printer Connections

Programmable Outputs

The TS790/900 has many programmable outputs which can be used to drive relays, LED's etc. Each output can be programmed for a different function, see "Programmable Output Types" on page 22.

Control Panel Outputs

The control panel has four programmable outputs:

[1] Set of voltage free changeover contacts rated at 1 Amp.

[-2] Switched -ve output rated at 500mA.

[+3] Switched +ve output rated at 500mA.

[+4] Switched +ve output rated at 500mA.

Node Outputs

Each TS900 Node has two programmable outputs:

[+A] Switched +ve output rated at 100mA.

[-B] Switched -ve output rated at 100mA.

Remote Keypads & TS700.LECs

Each remote keypad and TS700 LEC has one programmable output:

[O/P] Switched -ve output rated at 100mA.

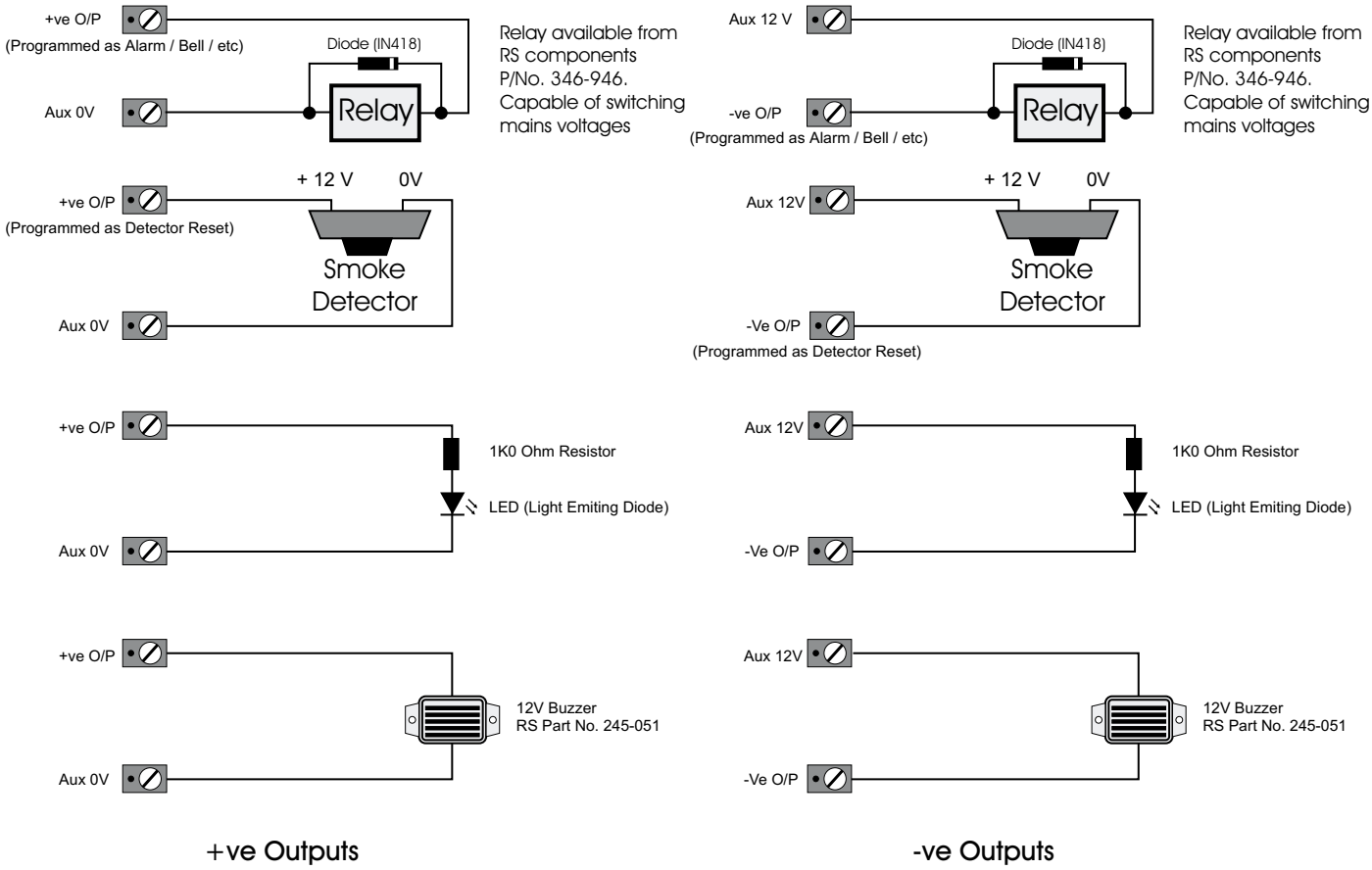


Figure 23 Output Examples

Installing a Monitored Power Supply

The TS790/TS900 can be configured to monitor the 519XB power supply unit using the 519FM fault monitor PCB. The 519FM plugs directly onto the 519XB PCB plug labelled JP1.

The 519FM PCB monitors any combination of:

- Supply Failure (mains)
- Low Battery Voltage
- 12V Failure (fuse failure)

In order to monitor the above fault conditions, the outputs on the 519FM must be connected to a detection circuit.

If required, the PSU battery can be "load tested" periodically by connecting a switched +ve output to the 519FM BATT TEST terminal. The battery test occurs every hour on the hour for one minute, if during this time the battery voltage drops below 10.6V a "Battery Fault" indication will be generated.

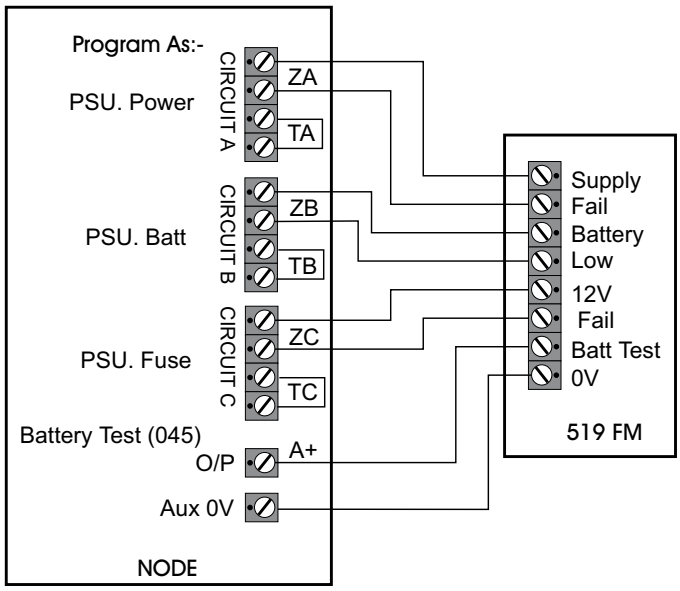


Figure 24 519FM Connections

Pre Power-Up Checks

Once the system is installed, but prior to powering-up give the system one final check to ensure that:

1. The wiring conforms to the requirements detailed in this manual and that all interconnections are correct (A to A, B to B etc.).
2. All system cables are kept clear of mains supply cables, telephone cables and R.F. cables. It is recommended that cable ties be used to keep cables separated.
3. Verify that maximum cable lengths and resistances are not exceeded.
4. Mains power supply cables to the system are connected to an un-switched fused spur.
5. Grommets are used where cables enter metal housings to ensure that insulation is not compromised.

Initial Power-Up

To power the system for the first time:

1. Place a small screwdriver blade between the pins on the control panel PCB, marked "FACTORY RESET". This will ensure the factory default parameters are set, *see page 19.*
2. Switch on the 240V mains supply and remove the screwdriver blade.
3. Check that the power LED on the control panel PCB is illuminated.
4. Check that the LED remote keypads display "LE" (Panel Lid tamper) and LCD remote keypads display "Panel Lid tamper". The remote keypad sounders and extension loudspeakers will operate.
5. Enter the engineers passcode (default 1234) to silence the sounders.
6. Connect the standby battery.

Power-Up Checks

When the initial power-up checks have been completed, check the following:

1. Switch off the 240V mains supply and measure the DC voltage at each Node and remote keypad and ensure the voltage is greater than 11V whilst the system is powered from its standby battery.
2. Switch on the 240V mains supply and measure the DC voltage between the mains earth connection and AUX +12V. Then measure the DC voltage between the mains earth connection and AUX 0V. In both cases the measurement should be 1V or less. If the voltage is greater than 1V, the system has an "Earth Fault" and all cables should be checked for isolation to Earth.
3. Using a voltmeter measure the DC voltage across the control panel PCB test points (V) and calculate the system current consumption (see page 7). Ensure that the reading is not greater than 1.5A.
4. Repeat test (3) with the system in an alarm condition and ensure that the reading is not greater than 1.0A for the TS790 and 1.5A for the TS900.

☞ *The TS790 & TS900 have an overload protection circuit. If the power supply is overloaded, the display will show: "PSU OVERLOAD ! ! !" and sounder will sound.*

NVM Defaults

Section	Option	Default
User Codes	User 00 Engineer	1234
	User 01 Master	5678
	User 02 - 31	Not Used
Panel Outputs	Panel Output 1	Walk Test
	Panel Output 2	Courtesy Light
	Panel Output 3	Switch 12V
	Panel Output 4	Detector Reset
	Panel Output 5	Code Accepted
	Panel Output 6	Code Accepted
	Panel Output 7	Code Accepted
	Panel Output 8	Code Accepted
Digicom Outputs	Digicom Output 1	Fire
	Digicom Output 2	PA
	Digicom Output 3	Alarm
	Digicom Output 4	Set
	Digicom Output 5	Engineer on Site
	Digicom Output 6	Bell
	Digicom Output 7	Tamper
	Digicom Output 8	Second Alarm
Digi Channels	Digi Channel 1	Fire
	Digi Channel 2	PA
	Digi Channel 3	Alarm
	Digi Channel 4	Set
	Digi Channel 5	Engineer on Site
	Digi Channel 6	Bell
	Digi Channel 7	Tamper
	Digi Channel 8	Second Alarm
Node Outputs	Node Output 1	Walk Test
	Node Output 2	Courtesy Light
	Node Output 3	Switch 12V
	Node Output 4	Detector Reset
	Node Output 5	Code Accepted
	Node Output 6	Code Accepted
	Node Output 7	Code Accepted
	Node Output 8	Code Accepted
	Node Output 9	Code Accepted
	Node Output 10	Code Accepted
Circuits	Circuit 01	Final Exit
	Circuit 02	Night (Access)
	Circuit 03 - 06	Night

Section	Option	Default
Circuits	Circuit 07	Exit Terminator
	Circuit 08	PA Audible
	Circuit 09	Final Exit
	Circuit 10	PA Audible
	Circuit 11 - 56	Not Used
System Timers	00 Test Call At	000 seconds
	01 No of Re-arms	000
	02 Settle Time	007 seconds
	03 Part Set Coms Dly	000 seconds
	04 Exit Time	030 seconds
	05 Entry Time	015 seconds
	06 Bell Duration	020 minutes
	07 Bell Delay	000 minutes
	08 D-Knock Delay	000 seconds
	09 Test Time	014 days
	10 Second Entry	015 seconds
	11 Service Time	000 weeks
	12 Payment Time	000 weeks
	13 Part Set Bell Delay	030 seconds
	14 Courtesy Duration	030 seconds
	15 Access Code Dur.	030 seconds
	16 Modem Rings	000
	17 Point ID Alarm	005
	18 Ward Menu Dur.	000 seconds
	19 Test Call	000 days
	20 2nd Alarm Duration	060 seconds
	21 Part Set Codes	021
	22 Line Fault Delay	000 minutes
	23 Mains Off Delay	000 minutes
	24 No. Remote Resets	005
	25 Monitor Duration	010 minutes
	26 Activity Duration	024 hours
	27 Part Set Entry Time	015 seconds
	28 Abort Delay	180 seconds
Setting Modes	Full Set	Final Exit Setting
	Part Set A	Timed Exit
	Part Set B	Timed Exit
	Part Set C	Timed Exit
Rem Reset	Algorithm	004
Configuration	00 Bell is an SAB	Yes
	01 User 1 Limited	No

Section	Option	Default
Configuration	02 Fire Signals All	No
	03 Silent 24hr Circuits	No
	04 Enable Duress	No
	05 PA Silent	Yes
	06 Set With Line Fault	Yes
	07 User Reset	Yes
	08 Tamper Eng Reset	Yes
	09 Hi Security Engineer	No
	10 O/M's Mimic Ccts	Yes
	11 Do Battery Test	No
	12 Final Exit is Night	No
	13 Audible Time Switch	No
	14 Show P.Set Info.	Yes
	15 Answer Phone Dft	No
	16 Set with AC Off	Yes
	17 Loud Chime Tones	No
	18 Invert Output 1	No
	19 Invert Digi Outputs	No
	20 On-Line Keypad	Yes
	21 Restore Point ID	Yes
	22 User Authorised	No
	23 Mimic Alarm & Fault	No
Part Set Groups	Part Set Group A	Ward A
	Part Set Group B	Ward B
	Part Set Group C	Ward C
Code Set Groups	Code Set Group A	Ward A
	Code Set Group B	Ward B
	Code Set Group C	Ward C
	Full Set Group	Wards SABC
Custom Text	Reset Message	CALL ENGINEER TO RESET SYSTEM
	Banner Message	Blank
	Location Text	Blank
	Printer Header	Blank
	Part Set Banner	Blank
Modem Options	Call Back No 1	Blank
	Call Back No 2	Blank
	Call Back No 3	Blank
	Modem Password	Blank
	Modem Site No.	Blank

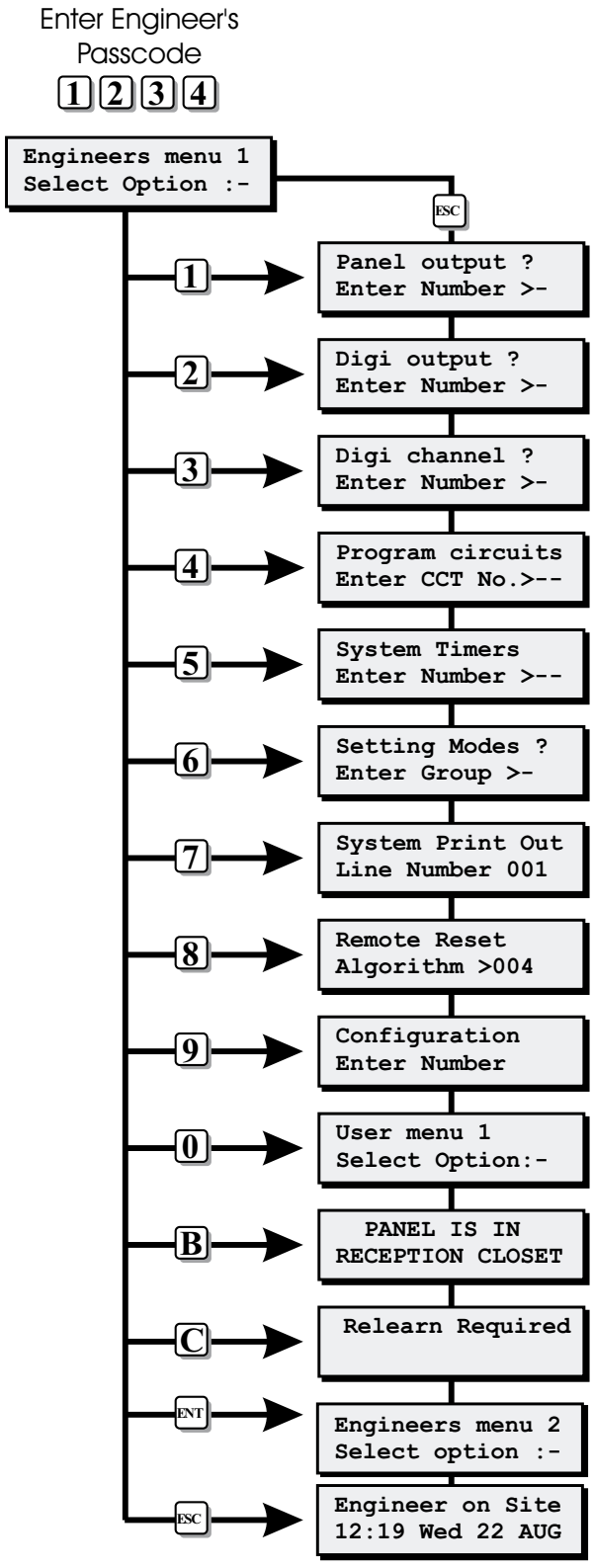
Engineer's Menu 1

Introduction

Engineers menu 1 is the first of three engineers menus, which is selected when the engineer's passcode is entered. The engineer may leave "Engineer menu 1" by pressing the [ESC] key. The system will return to the unset condition but the remote keypads will show "Engineer-on- site". This message will be cleared the next time a valid user passcode is entered or by exiting the engineer's mode via user menu 1.

Menu contents

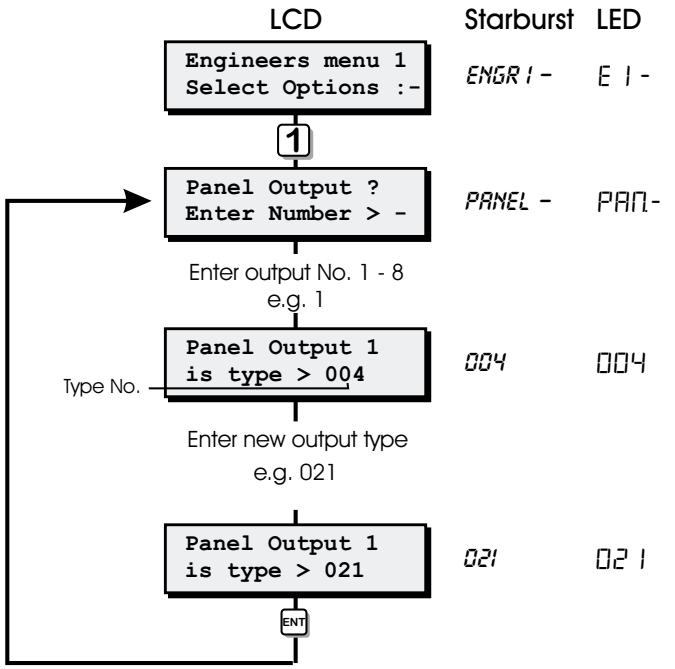
Hotkey	Option	Page
1	Program Panel Outputs	22
2	Program Digicom Outputs	22
3	Program Digicom Channels	22
4	Program Circuits & Attributes	25
5	Program System Timers	27
6	Program Setting Modes	30
7	System Printout	30
8	Remote Reset Number	31
9	Program Configuration	31
0	Goto User Menu 1	33
B	View Location Text	34
C	Relearn Required	34



Engineers Menu 1

Panel Outputs

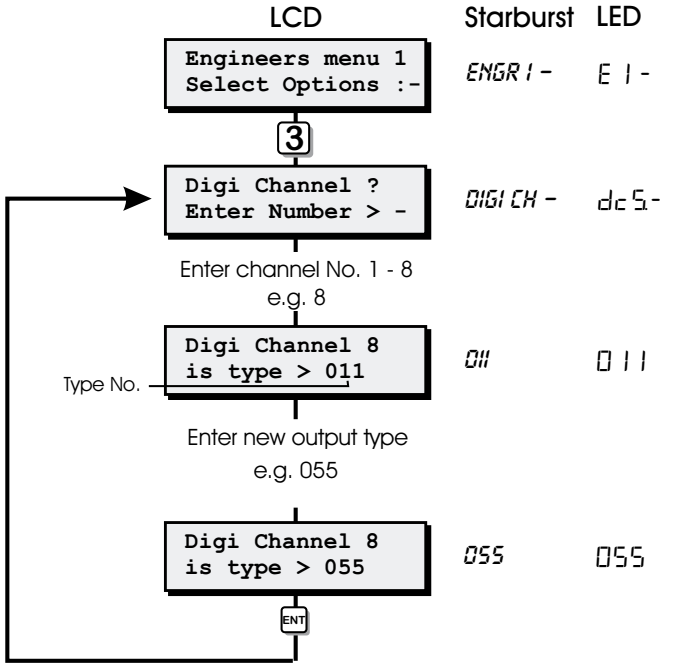
Outputs 1 - 4 on the control panel and remote keypad outputs 5 - 8 can be programmed to any of the output types shown on page .22



Panel Outputs Flowchart

Digicom Channels

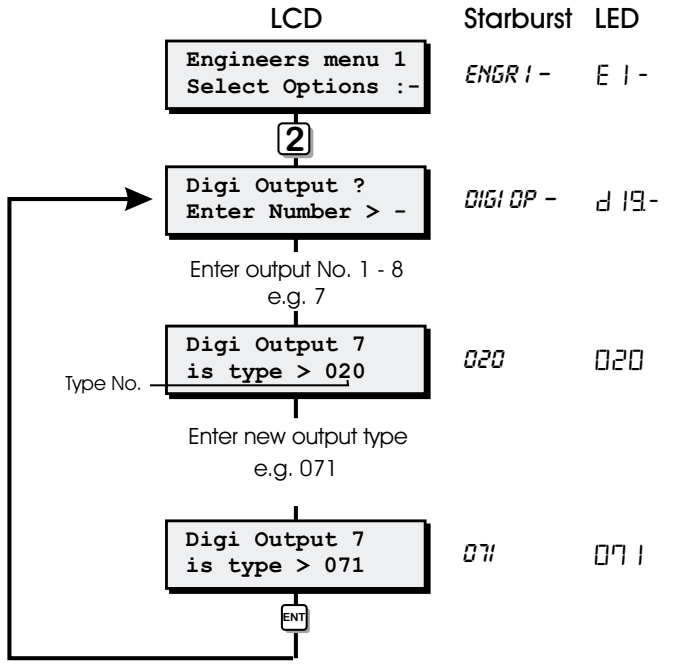
The 8 plug-on digicom channels can be programmed to any of the output types shown on page 22.



Digi Channels Flowchart

Digicom Outputs

The 8 digicom outputs on the control panel PCB can be programmed to any of the output types shown on page 22. In addition, all outputs can be inverted, *see "Configuration option 19" on page 32.*



Digi Outputs Flowchart

Programmable Output Types

No/Type	Description
000 **Bell On**	Activates when the main Bell trigger is on and deactivates at the end of the Bell Duration time or when the alarm is cancelled by the user.
001 **Strobe On**	Activates when the Strobe trigger is on, and deactivates when the alarm is cancelled by the user.
002 **Switch 12V**	Activates when the system is set and deactivates when an alarm occurs or the system is unset. This output is normally used for latching detectors.
003 **Detector Reset**	Normally active at all times and deactivates for 3 seconds when a valid passcode is entered prior to setting the system. This output is normally used for detector that required power to be removed in order to reset them, e.g., smoke detectors.
004 **Walk Test**	Activates when the "Walk Test" option is selected and deactivates when the "Walk Test" option is finished.
005 **Alarm**	Activates when an intruder alarm is detected and deactivates when the alarm is reset or aborted.

No/Type	Description
006 P.A.	Activates when a PA alarm is detected and deactivates when the alarm is reset.
007 Fire	Activates when a Fire alarm is detected and deactivates when the alarm is reset.
008 System Set	Activates when any ward is set and deactivates when the system is fully unset.
009 Code Accepted	Activates for 5 seconds following entry of any valid passcode.
010 24 Hour	Activates when a 24Hr alarm is detected and deactivates when the alarm is reset.
011 Second Alarm	Activates when a different detector causes an alarm and remains active for the duration of the "2nd Alarm Time". This output is normally used for an ALARM CONFIRMATION signal.
012 Courtesy Light	Activates during entry and when any remote keypad is used. The duration of this output is controlled by the setting of the "COURTESY DUR" timer.
013 Engr On Site	Activates when the engineer's passcode is entered and deactivates when a user passcode is entered.
014 Ccts Omitted	Activates when any circuit is omitted and deactivates when all circuits are reinstated.
015 Auxiliary	Activates when an Auxiliary alarm is detected and deactivates when the alarm is reset.
016 Ward A Armed	Activates when "Ward A" is in exit mode and when "Ward A" is set. Deactivates when "Ward A" is unset.
017 Ward B Armed	Activates when "Ward B" is in exit mode and when "Ward B" is set. Deactivates when "Ward B" is unset.
018 Ward C Armed	Activates when "Ward C" is in exit mode and when "Ward C" is set. Deactivates when "Ward C" is unset.
019 Ward S Armed	Activates when "Ward S" is in exit mode and when "Ward S" is set. Deactivates when "Ward S" is unset.
020 Tamper Fault	Activates when a Tamper alarm is detected and deactivates when the alarm is reset.
021 Line Fault	Activates when a telephone line fault is detected and deactivates when the fault is cleared.
022 Mains Off	Activates when mains power is removed and deactivates when the mains power is restored.

No/Type	Description
023 Exit / Entry	Activates when the panel is in the exit or entry mode.
024 Test Fail	Activates when a circuit fails test, deactivates when reset by the engineer.
025 First Knock	Activates when a double knock circuit is activated for the first time. Deactivates when the circuit is activated for the second time or when the system is reset.
026 Comms Failed	Activates for 5 seconds when the plug-on digicom fails to communicate.
027 Comms Success	Activates for 5 seconds when the plug-on digicom communicates successfully.
028 Comms Active	Activates when the plug-on digicom is active and deactivates when the plug-on digicom is inactive.
029 2nd Entry	Activates when the second entry timer is started and deactivates when the second entry timer expires.
030 Entry	Activates when the panel is in the entry mode.
031 Exit	Activates when the panel is in the exit mode.
032 Ward A Set Fail	Activates when "Ward A" fails to set and deactivates when the set fail condition is reset by the user.
033 Ward B Set Fail	Activates when "Ward B" fails to set and deactivates when the set fail condition is reset by the user.
034 Ward C Set Fail	Activates when "Ward B" fails to set and deactivates when the set fail condition is reset by the user.
035 Ward S Set Fail	Activates when "Ward S" fails to set and deactivates when the set fail condition is reset by the user.
036 Ward A Alarm	Activates when a circuit in "Ward A" causes an alarm and deactivates when the alarm in "Ward A" is reset.
037 Ward B Alarm	Activates when a circuit in "Ward B" causes an alarm and deactivates when the alarm in "Ward B" is reset.
038 Ward C Alarm	Activates when a in "Ward C" causes an alarm and deactivates when the alarm in "Ward C" is reset.
039 Ward S Alarm	Activates when a circuit in "Ward S" causes an alarm and deactivates when the alarm in "Ward S" is reset.
040 Time Switch A	This output is controlled by the settings of "Time Switch A" (see Engineers Menu 3)

No/Type	Description
041 **Time Switch B**	This output is controlled by the settings of "Time Switch B" (see Engineers Menu 3)
042 **Time Switch C**	This output is controlled by the settings of "Time Switch C" (see Engineers Menu 3)
043 **Access Code**	Activates when an "Access" passcode is entered. The duration of this output is controlled by the setting of the "Acc.CODE DUR" timer (see System Timers).
044 **General Fault**	Activates during battery fault or when the system is prevented from being set. Deactivates when all faults are cleared.
045 **Battery Test**	Activates for 1 minute on the hour every hour. This output is used to test the battery in remote PSU using a 519FM monitor PCB).
046 **Service Call**	Activates when the system is on-line with a remote PC and Lineload software.
047 **System Full Set**	Activates when all areas within the system are set and deactivates when any area is unset.
048 **Custom O/P A**	This output is active when a combination of output conditions occur. The combinations are programmed in Engineers Menu 3 *(see page 47)*.
049 **Custom O/P B**	This output is active when a combination of output conditions occur. The combinations are programmed in Engineers Menu 3 *(see page 47).*
050 **PC output 1**	This output can be switched on or off via the PC and "Lineload" software.
051 **PC output 2**	This output can be switched on or off via the PC and "Lineload" software.
052 **Sounder Control**	Normally used as the 0V connection for an extension loudspeaker so that only system alarm tones are generated. Only suitable for Panel Outputs 1 and 2.
053 **Service Required**	Activates when the "SERVICE REQUIRED" message is displayed and deactivates when the engineer passcode is entered.
054 **Call Engineer**	Activates when the system requires an "Engineer Reset", deactivates when the system is reset by the engineer or "Remote Reset".
055 **Always Off**	Never activates.
056 **Duress**	Activates when a duress passcode is entered and deactivates when the duress alarm is reset.

No/Type	Description
057 **System Part Set**	Activates when the system is part set, deactivates when the system is fully unset or fully set.
058 **Battery Fault**	Activates when a battery fault occurs and deactivates when the battery fault is cleared.
059 **Set Fail**	Activates when any ward fails to set, deactivates when the set fail condition is reset.
060 **Open/Close**	Activates when the system is unset, deactivates when the system is set/part-set.
061 **ID Alarm**	Activates for 2 seconds when any circuit causes a new alarm condition.
062 **Random**	Activates randomly (min = 5 minutes, max =60 minutes)
063 **Modem lockout**	Activates when the modem is locked-out (four failed attempts). Deactivates when a master user passcode is entered or after 4 hours.
064 **Sndr Control A**	Activates when "Ward A" is in entry, exit, alarm or set fail.
065 **Sndr Control B**	Activates when "Ward B" is in entry, exit, alarm or set fail.
066 **Sndr Control C**	Activates when "Ward C" is in entry, exit, alarm or set fail.
067 **Sndr Control S**	Activates when "Ward S" is in entry, exit, alarm or set fail.
068 **Chime**	Activates for 2 seconds when a circuit that is programmed as "chime" is activated.
069 **24hr Ccts Omit**	Activates when one or more 24 Hour circuits are omitted.
070 **Timed Output**	Activates when a "Monitored" circuit is triggered and remains active for the duration of the "Monitor Dur" *see System Timers*.
071 **Abort**	Activates for 5 seconds after an alarm is aborted by the user. The period in which the alarm may be aborted is set by the "Abort Delay" *see System Timers*.
100 - 155 **Circuit Mimics**	Will mimic (active when circuit is active) circuits 01 to 56 respectively
200 - 255 **Circuit Alarms**	Active when a circuit causes an alarm, for circuits 01 to 56 respectively .

Program Circuits

The TS790 can monitor up to 16 detection circuits, whereas the TS900 can monitor up to 56 detection circuits. Each circuit must be programmed in order for the system to respond correctly.

Circuit Types

The circuit type defines how the circuit will respond when it is triggered. The following circuit types are available:

0 Not Used
A circuit that will never generate any alarm.

1 Night
A circuit that will generate a full alarm when the system is set.

2 24hr
A circuit which is monitored at all times. When triggered in the unset condition a local alarm is generated and when triggered in the set condition a full alarm is generated.

3 PA Silent
A circuit which is monitored at all times. When triggered it will activate any outputs that are programmed as P.A.

4 PA Audible
A circuit which is monitored at all times. When triggered it will activate any outputs that are programmed as P.A. and generate a full alarm condition.

5 Fire
A circuit that is normally connected to a smoke detector. When triggered it will generate a fire tone on the internal sounders, the external sounders are pulsed for the bell duration and any outputs programmed as fire will be activated.

6 Auxiliary
A circuit which is monitored at all times. When triggered it will activate any outputs programmed as Auxiliary.

7 Final Exit
This must be the first detector or door contact that is triggered when entering the protected area. When the setting mode for the system is programmed for Final Exit setting, opening and closing of this circuit during the exit procedure will cause the system to set. Once set, activation of this circuit will start the entry timer.

8 Exit Terminator
A circuit that is normally connected to a push button outside the protected premises, which can be used to finally set the system or area.

9 Keypoint
A circuit that may be connected to a keyswitch to allow setting and/or part-setting of the system.

The Key Point circuit has two groups of attributes. The first group of attributes control the wards that are set/unset when the circuit is switched between "Healthy" and "Active". The second group of attributes control the wards that are set/unset when the circuit is switched between "Healthy" and "Shorted".

When programming the Key Point circuit the eight standard attributes are not available, instead the attributes are used to select the Key Point operation as follows:

[1] Full Set Group - "Healthy" to "Active".

[2] Code Set Group A - "Healthy" to "Active".

[3] Code Set Group B - "Healthy" to "Active".

[4] Code Set Group C - "Healthy" to "Active".

[5] Full Set Group - "Healthy" to "Shorted".

[6] Code Set Group A - "Healthy" to "Shorted".

[7] Code Set Group B - "Healthy" to "Shorted".

[8] Code Set Group C - "Healthy" to "Shorted".

If the "Key Point" is not assigned to any of the above options, the circuit becomes a "Monitored" circuit. A "Monitored" circuit is monitored at all times. When triggered it will activate any outputs that are programmed as Timed Output and log the event.

A PSU-Battery
This circuit may be connected to the 519XB power supply via the 519 FM PCB to allow the monitoring of the standby battery. See "Monitoring a Power Supply" on page 18.

B PSU-Fuse
This circuit may be connected to the 519XB power supply via the 519 FM PCB to allow the monitoring of the standby battery. See "Monitoring a Power Supply" on page 18.

C PSU-Power
This circuit may be connected to the 519XB power supply via the 519 FM PCB to allow the monitoring of the mains power failure. See "Monitoring a Power Supply" on page 18.

Circuit Attributes

Each circuit type can have one or more attributes assigned to it to alter its operation. The following circuit attributes can be programmed:

1 Access
Circuits programmed with this attribute are automatically isolated during the entry procedure to allow a "walk through" route for the user to access the remote keypad. The "Access" attribute can only be assigned to Night and Final Exit circuit types.

2 Double Knock
Circuits programmed with this attribute will only cause an alarm condition if:

a) The circuit is activated twice within the Double Knock window (this time may be set in the System Timers menu).

b) The circuit remains active for the whole duration of the Double Knock window. The "Double Knock" attribute can only be assigned to Night, 24hr, PA and Auxiliary circuit types.

3 Test
Circuits with this attribute will be disabled from the system for the period set by the "Test Time" (see System Timers). If the circuit is activated during this period the activation will be logged and the user is informed of the circuit failure when trying to set the system. The test fail message may only be cleared with the Engineers passcode. If at the end of the test period no activations have occurred the circuit is automatically removed from test and behaves as normal. The test period is initiated by entering the Engineers passcode. The "Test" attribute can only be assigned to Night, 24hr, PA Silent, PA Audible, Fire, Auxiliary, PSU Battery, PSU Fuse and PSU Power circuit types.

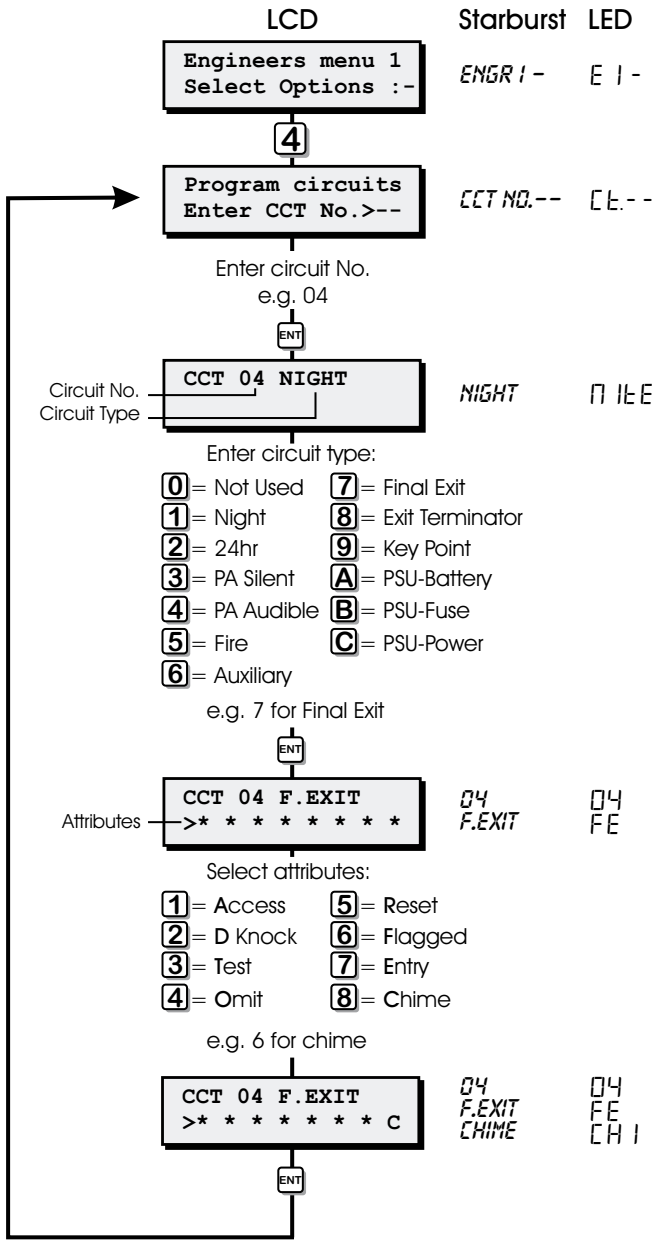
4 Omittable
Circuits with this attribute are allowed to be omitted by the user when setting the system. The "Omit" attribute can only be assigned to Night, 24hr, Auxiliary, PSU Battery, PSU Fuse and PSU Power circuit types.

5 Reset
This attribute is normally assigned to a circuit that is connected to a vibration or smoke detector, so that during the "Detector Reset" period the circuit is not monitored. The "Reset" attribute can only be assigned to Night, 24hr, Fire and Auxiliary circuit types.

6 Flagged
Circuits with this attribute are monitored during the unset condition so that when they activate the circuit activation is stored. When the user decides to set the system, any circuits that have not been activated during the "Activity Dur" period are reported to the user, indicating that the detector may be obstructed. An example of this feature would be to assign movement detectors within a warehouse area with this attribute. This would report to the user at the time of setting any detectors that have become obstructed by pallets etc. The "Flagged" attribute can only be assigned to Night, Final Exit and Exit Terminator circuit types.

7 Entry
Circuits with this attribute will initiate the entry procedure when the system is part-set and respond as normal when full set. This attribute must be assigned to all circuits that are required to initiate the entry procedure in the part-set condition. The "Entry" attribute can only be assigned to Night, 24hr and Final Exit circuit types. When assigned to a 24 Hour circuit type, the circuit can be used to initiate the entry procedure. Once the system is unset the 24 hour will revert to normal operation.

8 Chime
Circuits with this attribute will cause the internal sounders and remote keypad sounders to generate a two tone "chime" sound if the circuit is activated. The users may enable or disable the chime feature, or select it to operate when the system is unset or part-set. The "Chime" attribute may only be assigned to Night, 24hr, Auxiliary, Final Exit and Exit Terminator circuit types.



Program Circuits Flowchart

System Timers

The system timers are as follows:

00 Test Call At
This timer controls the hour at which the control unit sends a timed test call. For example, if the timer is set at 003 (default) then the control unit sends a test call at 03:00 am. If the timer is set to 014 then the control unit sends the test call at 02:00 pm.

01 No of Re-Arms
At the end of the bell duration time the system re-arms all circuits that are healthy. Circuits that are still in an alarm are isolated until they change to a healthy condition. This counter controls the number of times that a "circuit" will re-arm before it is locked out of the system. This counter has a working range of 000-199.

02 Settle Time
When setting the system by "Final Exit" or "Exit Terminator", detectors that are on the exit route sometimes take 3-4 seconds to settle after activation. The delay programmed in this timer is used to allow these detectors to settle before the system or area is set. This timer has a working range of 000-199 seconds.

03 Part Set Comms Delay
When the system is part-set the communication of an alarm signal to the central station can be delayed by the value set in this timer. If the timer is set to 199 the part-set communications are disabled. This timer has a working range of 000-199 seconds.

04 Exit Time
This timer sets the delay between the user initiating the exit procedure and the system (or area) actually setting. If during the exit time an "Exit Terminator" circuit is activated the exit time is cancelled and the system sets immediately. This timer has a working range of 000-199 seconds.

05 Entry Time
When the system is set or part-set, and the entry procedure is initiated, the entry timer starts to count down. If a valid user passcode has not been entered when the timer reaches zero, the internal sounders are activated and the "2nd Entry. . ." timer is started. This timer has a working range of 000-199 seconds.

06 Bell Duration
This controls the duration of the external bell/sounder. If the timer is set to 199 the bell output is continuous. This timer has a working range of 000-199 minutes.

07 Bell Delay
This timer delays the activation of the external bell/sounder and internal sounders. This timer has a working range of 000-199 minutes. Note: Any alarm during the entry procedure will cancel the bell delay.

08 Double Knock Delay
This is the "Double Knock" time window in which either two circuit activation must occur within this time to generate an alarm condition. Or the circuit must remain active for the whole duration of this time to generate an alarm condition. This will only apply to circuits with the "Double Knock" attribute. This timer has a working range of 000-199 seconds.

09 Test Time
This timer varies the number of days that "Test" attribute may be applied to a circuit. If the timer is set to 000 then circuits will remain on test until the "Test" attribute is removed. This timer has a working range of 000-030 days.

10 Second Entry
When the "Entry Timer" has expired the "2nd Entry timer" starts to count down, if at the end of this time the system or area has not been unset then a full alarm will be generated. This timer has a working range of 000-199 seconds.

11 Service Time
The installation company may use this timer to periodically generate a "SERVICE REQUIRED" message so that the user is reminded that a service call is required. The users may continue to set and unset the system. When the engineer attends the site and enters their passcode the message is cleared. The service timer is re-started when the engineer re-selects this timer option. To disable this feature set the timer to 000. This timer has a working range of 000-199 weeks.

12 Payment Time
The installation company may use this timer to prevent the users from setting the system. When the timer has expired the "CALL ENGINEER" message is displayed and the users are unable to set the system until the engineer has reset the system or the user has been provided with a "Remote Reset" code. To disable this feature set the timer to 000. This timer has a working range of 000-199 weeks.

13 Part Set Bell Delay
This is a "Part-Set Bell Delay" and operates as follows:

a) If the "Pset Com.Dly" is set to 000 and an alarm is activated whilst the system is part-set, the "Bell Delay" timer is started. At the end of the bell delay the internal sounders are activated for the duration of the "Pset Bel.Dly". At the end of this delay the bell output is activated.

b) If the "Pset Com.Dly" is not set to 000 and an alarm is activated whilst the system is part-set, the "Bell Delay" timer is cancelled and the internal sounders are activated for the duration of the "Pset Bel.Dly". At the end of this delay the bell output is activated.

If the "Part Set Bell Delay" timer is set to 199 the bell output is not activated when an alarm occurs whilst the system is part set. This timer has a working range of 000 - 199 seconds.

14 Courtesy Duration
This timer is used to control the duration of the output type "Courtesy Light". This timer has a working range of 000-199 seconds.

15 Access Code Duration
This timer is used to control the duration of the output type "Access". This timer has a working range of 000-199 seconds.

16 Modem Rings
This counter is for use with the DC58M, it allows the installer to specify how many rings are required before the DC58M picks up the call. If the counter is set to 000 it will pick the call up as soon as any incoming ringing is detected. Note: If the system is fitted with a DC3M, the counter must be set to zero. This counter has a working range of 000-199.

17 Point ID Alarms
When using the DC58 or DC58M and "Point ID Extended Reporting". The number of point ID alarms that are transmitted to the central station per circuit are controlled by the value of this counter. e.g., if the counter is set to 003 then all circuits will report 3 activation's before they are locked out from sending any more. Note: this does not affect the re-arm of the zone. This counter has a working range of 000 - 199.

18 Ward Menu Duration
If the timer is set to 000 the "Code Set Group" passcodes function as normal, i.e., when the user enters their passcode the exit timer starts and the system attempts to set, on entering their passcode during entry, the wards assigned to their "Code Set Group" are unset. If the timer is set to anything other than zero all "Code Set Group" users are displayed a "Ward Selection Menu". The menu will prompt the user to select the wards that they require to set and unset during the setting & unsetting procedure. The user can only select the wards which have been allocated to their "Code Set Group", e.g., If "Code Set Group A" has been defined by the engineer to set wards B & C, the user can only affect wards B & C. Note: standard and master users may also access the "Ward Selection Menus", see timer 21. This timer has a working range of 000-199 seconds.

19 Test Call
If the system is fitted with a plug-on digicom (DC3, DC3M, DC54, DC58 or DC58M) it is possible for the control panel to make the digicom send a timed test call to the central station. The "Test Call" timer sets the period of activation, i.e., 000=Disabled, 001=daily, 007=weekly etc. Once programmed the digicom will send the test call at 3.00 AM. This timer has a working range of 000-199 days.

20 2nd Alarm Time
This timer controls the duration of the "Second Alarm" output. This timer has a working range of 000-199 seconds.

21 Part Set Codes
The value of this counter determines which standard users are given access to the "Ward Selection Menu". For example if the counter is set to 021, users 21 through to 31 have access to the menu. If the timer is set to 032 or above, none of the standard/master users have access to the menu. This counter has a working range of 000-199. Note: "Code set Groups" are not affected.

22 Line Fault Delay
This timer delays the "audible" line fault indication when a telephone line fault occurs. The display and any outputs programmed as "Line Fault" are not affected. This timer has a working range of 000-198 minutes. If you set the timer to 199 then the control unit stops the audible fault indication (but still logs the fault and shows it on the display).

23 Mains Off Delay
This timer delays the "audible" mains off indication when the mains power is removed. The display and any outputs programmed as "Mains Off" are not affected. This timer has a working range of 000-198 minutes. If you set the timer to 199 then the control unit stops the audible fault indication (but still logs the fault and shows it on the display).

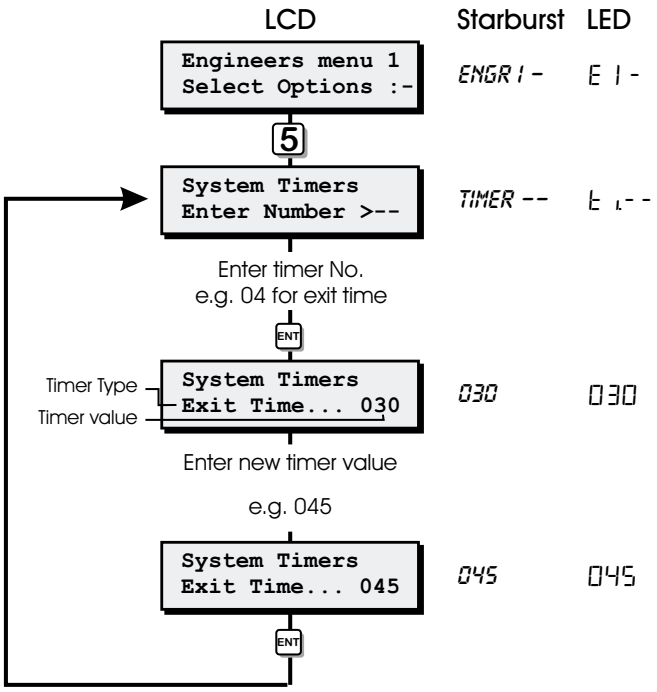
24 No Remote Resets
This counter determines how many coded "Remote Resets" can occur before the system locks into engineer reset only. Note: Remote Reset by the RR pins are also affected by this counter. This counter has a working range of 000-199.

25 Monitor Duration
This timer affects the duration of the "Timed Output" (No. 070). This timer has a working range of 000-199 minutes.

26 Activity Duration
This timer sets the duration for which all "Flagged" circuits must be activated within in order that the system may be set without flagging inactive circuits. Once the timer expires it is restarted and all "Flagged' circuits must once again be re-activated. This timer has a working range of 000-199 hours.

27 Part Set Entry Time
This timer sets the entry period for the system when the system is in the part-set condition. If the timer is set to 000 the part-set entry timer is the same as the main entry timer (timer 05). This timer has a working range of 000-199 seconds.

28 Abort Delay
This timer sets the period in which the alarm signal may be aborted following an alarm condition. When an alarm occurs, the "Abort Output" (071) is only activated if the system is unset within this period. If the system is unset after this period the abort output is NOT activated. This timer has a working range of 000-199 seconds.



System Timers Flowchart

Setting Modes

The setting mode for full set and each part set can be configured to the following setting modes:

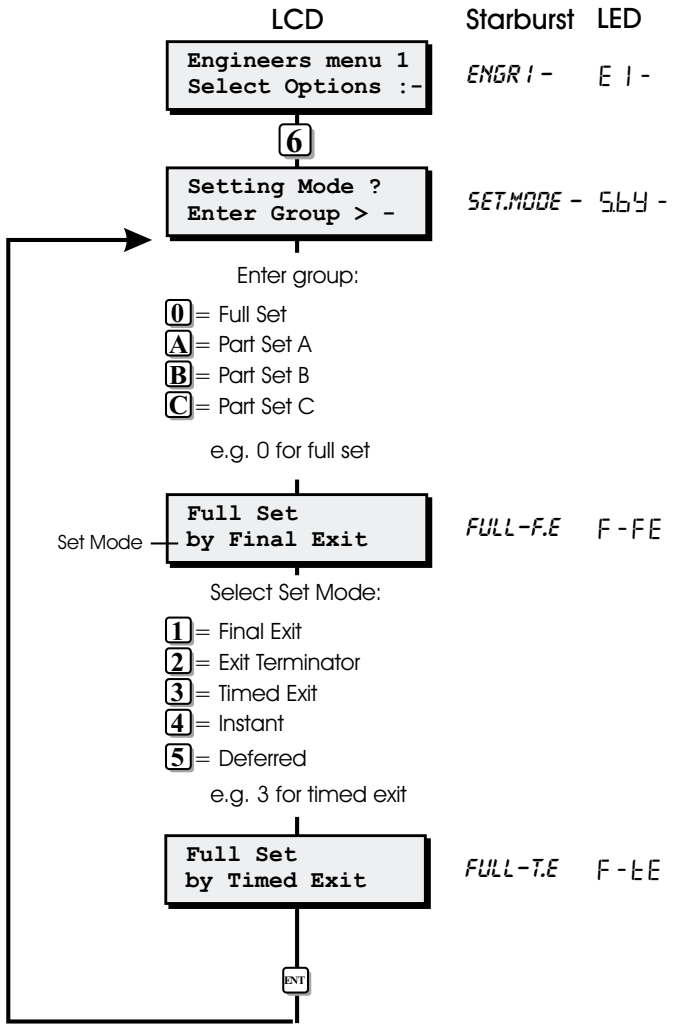
1 **Final Exit**
The system will set when the "Final Exit" circuit is activated and after the "Settle Time" has expired.

2 **Exit Terminator**
The system will set when the "Final Exit" circuit is activated, the "Exit Terminator" button is pressed and after the "Settle Time" has expired.

3 **Timed Exit**
The system will set when the "Exit Time" has expired or if the "Exit terminator" button is pressed.

4 **Instant**
The system will set instantly.

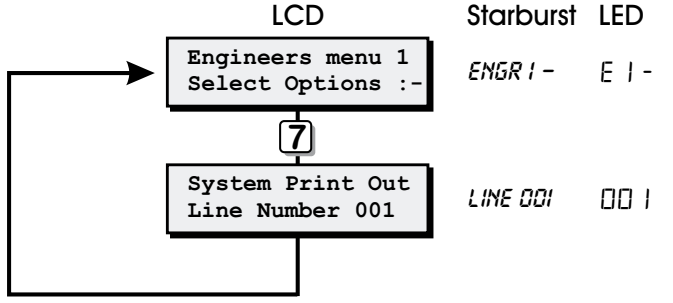
5 **Deferred**
Any circuit triggered during the exit will restart the exit timer.



Setting Modes Flowchart

Do System Print

If a printer is connected to the control panel a print out of all system parameters can be obtained.

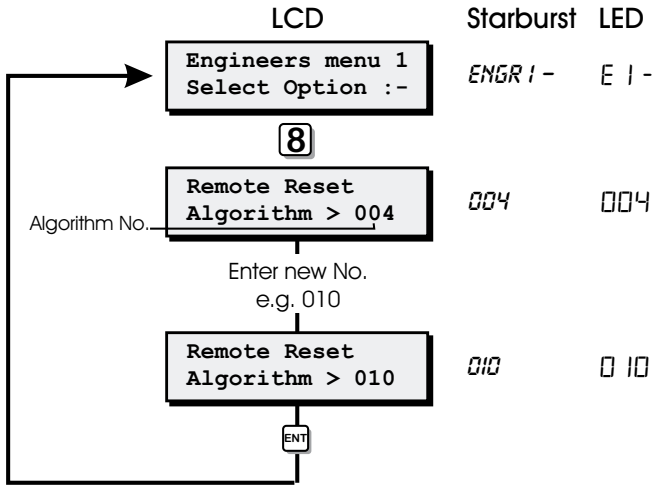


System Print Flowchart

Remote Reset Algorithm

When the system is programmed for "Engineer Reset" the requirement to send an engineer to site can be overridden by the user by using the "Remote Reset" facility. If an alarm is generated the system will respond with a four digit "seed" code which the user quotes to the Alarm Receiving Centre or alarm company. The "seed" code is then entered into a decoder and a unique "Remote Reset" code is generated. This is passed back to the user and on entering the "Remote Reset" code, the system is reset.

The "Remote Reset" code is generated using an algorithm identified by a 3 digit number. Alternative algorithms can be selected but these must correspond to that used by the ARC (or alarm company) otherwise the "Remote Reset" code will be incorrect. *(Default = 004)*



Remote Reset Algorithm Flowchart

Configuration

The configuration options are as follows:

00 Bell Is an SAB
When programmed as "Yes" the control panel bell output applies 0V when active. When programmed as "No" the control panel bell output removes 0V when active. *(Default = Yes)*

01 User 1 Limited
When programmed as "Yes" user 1 is disabled from options 6 and 8 in user menu 2 , and all options in user menu 3. When programmed as "No" user 1 has access to all user menus and options. *(Default = No)*

02 Fire Signals all
When programmed as "Yes" fire alarm activations are signalled to the ARC at all times. When programmed as "No" fire alarm activations are signalled to the ARC only when the system is full set. *(Default = Yes)*

03 Silent 24hr Circuits
When programmed as "Yes" 24hr circuit are silent. When programmed as "No" 24hr circuits are audible. *(Default = No)*

04 Enable Duress
When programmed as "Yes" the reversal of the first two digits on any passcode will generate a duress alarm. When programmed as "No" the reversal of the first two digits on any passcode will NOT generate a duress alarm. *(Default = No)*

05 PA Silent
When programmed as "Yes" PA's activated by pressing keys 1& 3 on the remote keypad will be silent. When programmed as "No" PA's activated by pressing keys ! & 3 on the remote keypad will be audible. *(Default = Yes)*

06 Set with Line Fault
When programmed as "Yes" the system can be set with a telephone line fault, however the user will be asked to confirm this at the time of setting. When programmed as "No" the system cannot be set with a telephone line fault. *(Default = Yes)*

07 User Reset
When programmed as "Yes" alarms can be reset by the user. When programmed as "No" alarms can only be reset by the engineer or via remote reset. *(Default = Yes)*

08 Tamper Engineer Reset
When programmed as "No" the user can reset daytime tamper alarms. When programmed as "Yes" only the engineer can reset daytime tamper alarms. *(Default = Yes)*

09 High Security Engineer
When programmed as "Yes" the engineer must enter his passcode and remote reset number to gain access to engineer's menu 1. When programmed as "No" only the engineer's passcode is required to access engineer's menu 1. *(Default = No)*

10 O/M's Mimic Circuits
When programmed as "Yes" the output modules mimic circuit activations. When programmed as "No" output modules give circuit alarm indication. *(Default = Yes)*

11 Do Battery Test
When programmed as "Yes" the control panel battery and any monitored PSU batteries are tested every hour and when exiting the engineer's mode. When programmed as "No" the control panel battery and any monitored PSU batteries are not tested. *(Default = No)*

12 F.Exit is Night
When programmed as "Yes" final exit circuits change to night circuits when the system is part set. When programmed as "No" final exit circuits remain as final exit circuits when the system is part set. *(Default = No)*

13 Audible Time Switch
When programmed as "Yes" the internal sounder will activate when any of the time switched outputs are active. When programmed as "No" the time switched outputs remain silent. *(Default = No)*

14 Show Part Set Information (LED Keypads)
When programmed as "Yes" the display will alternate between showing the time and wards that are set when the system is part set. When programmed as "No" the display will always show the time when the system is part set. *(Default = Yes)*

15 Answer Phone Defeat
For use with the DC58M to allow downloading to be carried out on telephone line with answer phones. When programmed as "Yes" Answer Phone Defeat is enabled. *(Default = No)*

16 Set with AC Off
When programmed as "Yes" the system can be set with no mains power. When programmed as "No" the system cannot be set with no mains power. *(Default = Yes)*

17 Loud Chime Tones
When programmed as "Yes" the chime tones are always at full volume. When programmed as "No" the chime tones are at the level set by VR1 on the main PCB. *(Default = No)*

18 Invert Output 1
When programmed as "Yes" panel output 1 is inverted. When programmed as "No" panel output 1 is normal. *(Default = No)*

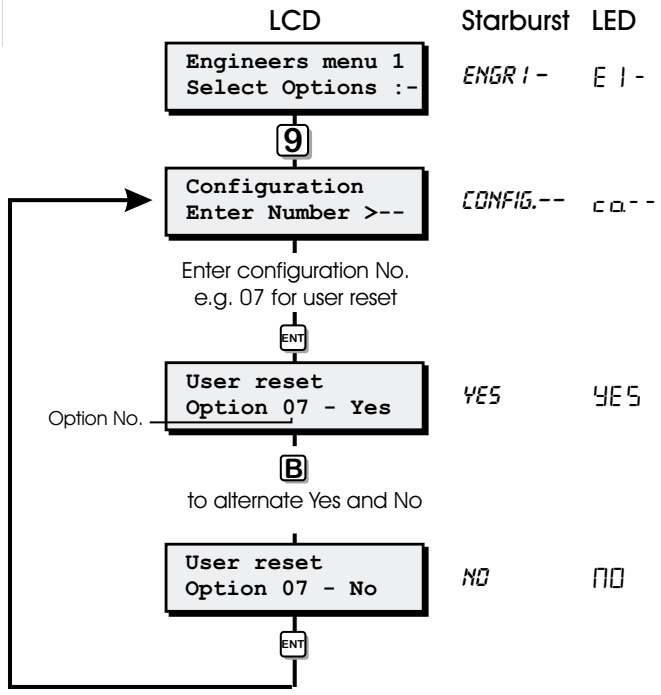
19 Invert Digi Outputs
When programmed as "Yes"" the eight digicom outputs on the control panel switch from 0V to +12V when active (+ve applied). When programmed as "No" the eight digicom outputs on the control panel switch from +12V to 0V when active (+ve removed). *(Default = No)*

20 On-Line Keypad
When programmed as "Yes" the Menvier Lineload On-Line Keypad feature is enabled. When programmed as "No" the Menvier Lineload On-Line Keypad feature is disabled. *(Default = Yes)*

21 Restore Point ID
When programmed as "Yes" the Point ID restore status is transmitted. When programmed as "No" point ID restore is not transmitted. *(Default = Yes)*

22 User Authorised
When programmed as "Yes" the Menvier Lineload software can only write information to the control panel after the user has authorised remote communications. When programmed as "No" the Menvier Lineload software can write information to the control panel without user authorisation. *(Default = No)*

23 Mimic Alarms and Faults
When programmed as "Yes" any outputs programmed as the type "Circuit Alarm" will activate when the relevant circuit is armed and in alarm or in a fault condition. When programmed as "No" any outputs programmed as the type "Circuit Alarm" will activate when the relevant circuit is in alarm, whether the circuit is armed or disarmed. *(Default = No)*

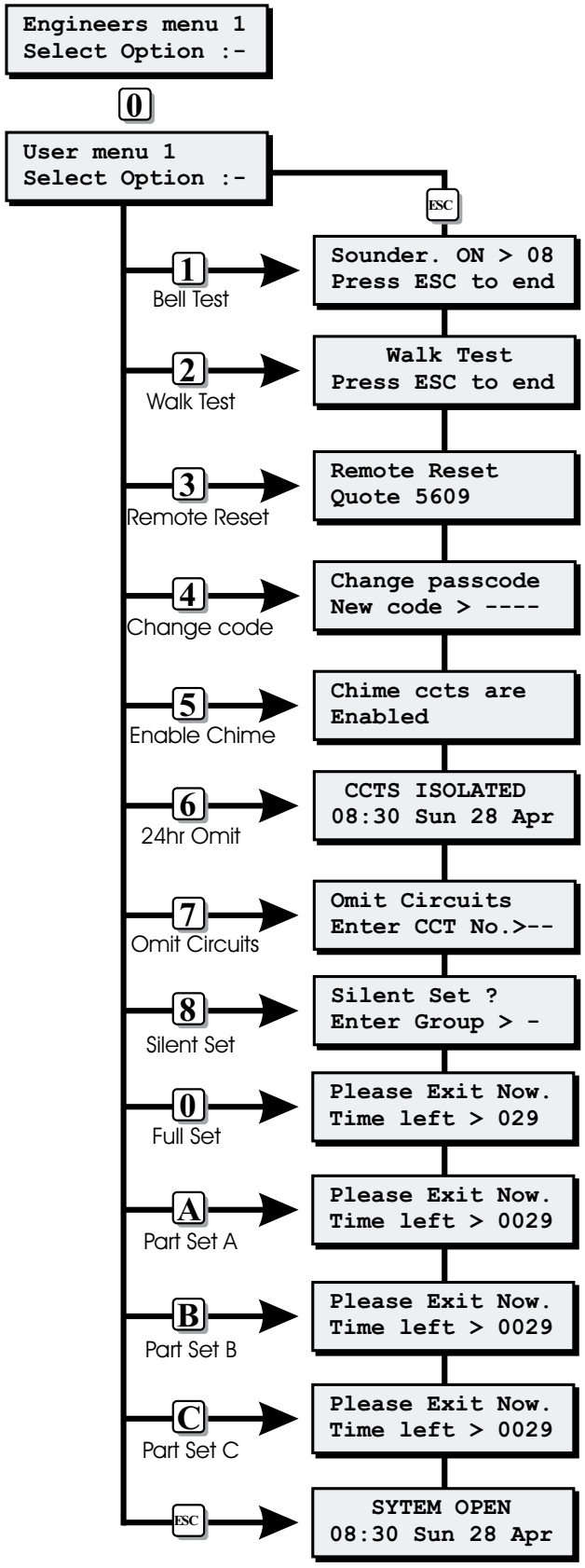


Configuration Flowchart

This option allows the engineer to access "User menu 1", the flowchart below shows the options within "User menu 1", for full details refer to the "Operators Manual".

Menu contents

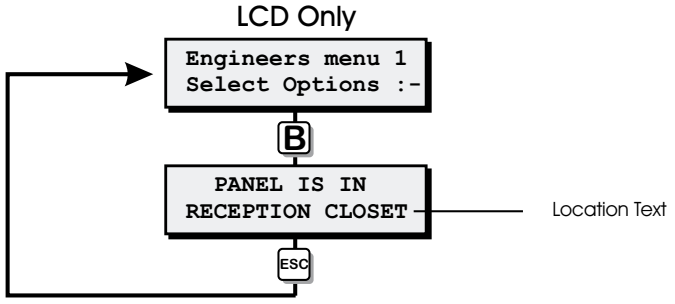
Hotkey	Option
1	Bell Test
2	Walk Test
3	Remote Reset
4	Change Passcode
5	Enable Chime
6	Omit 24hr Group
7	Omit Circuits
8	Silent Set
9	View Activity Count
0	Full Set
A	Part Set A
B	Part Set B
C	Part Set C



User Menu 1 Flowchart

View Location Text (LCD Only)

This option allows the engineer to view the panel location text. The text message is programmed in "Engineers menu 3", see page 44.

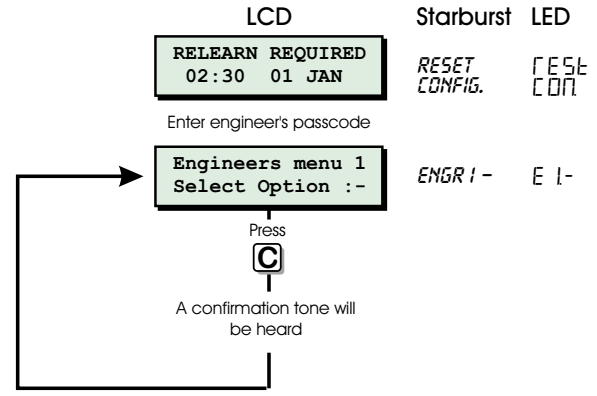


View Location Text

Relearn Hardware

The engineer must use this option if they have changed the system hardware configuration while in engineer's mode, for example by adding or removing a remote keypad.

When the engineer tries to exit from engineer's mode the display shows "RELEARN REQUIRED". To clear this message re-select Engineers Menu 1 and press C. The system gives an acceptance tone and re-logs all current hardware. Confirm the new hardware by viewing the system log.



Relearn Hardware

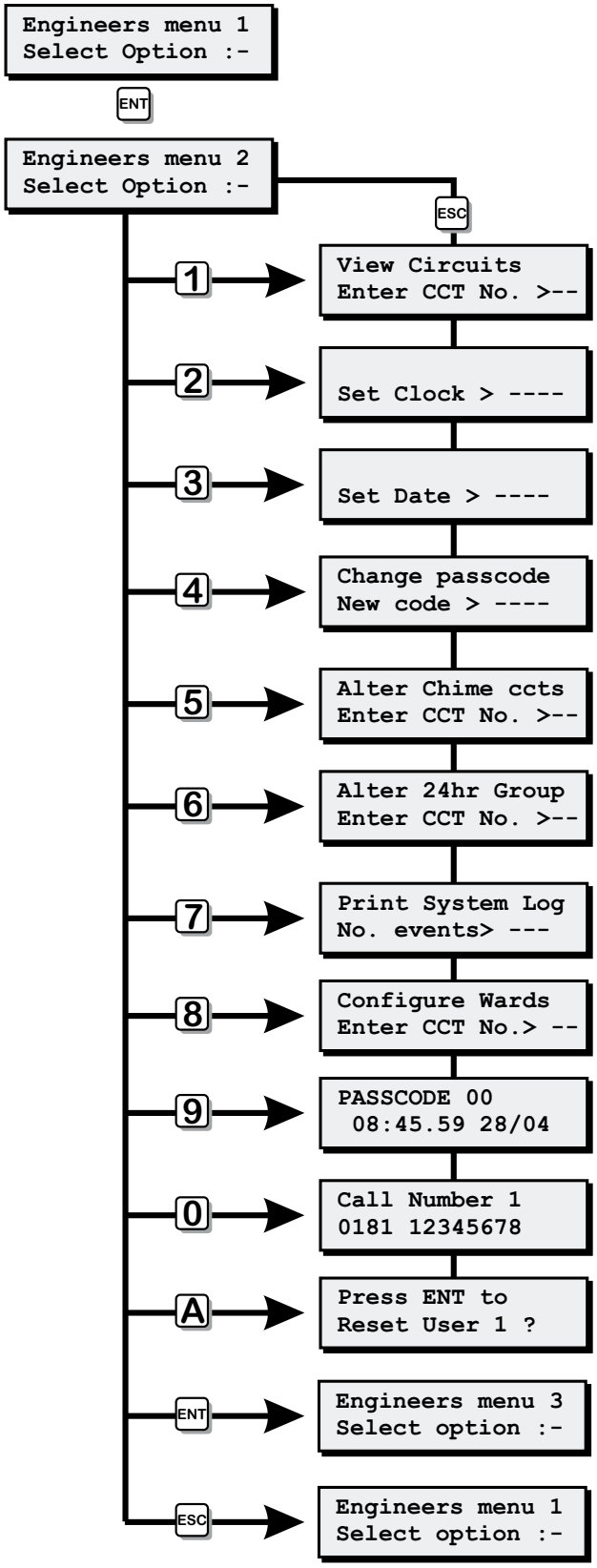
Engineer's Menu 2

Introduction

Engineer's menu 2 is selected by pressing the [ENT] key whilst Engineer's menu 1 is selected. Each menu option can be selected by pressing the relevant "Hotkey".

Menu Contents

Hotkey	Option	Page
1	View Circuits	36
2	Set System Time	36
3	Set System Date	36
4	Change Passcode	36
5	Chime Circuits	37
6	Alter 24Hr Group	37
7	Print System Log	37
8	Configure Wards	37
9	View System Log	38
0	Reset User Code 1	40
A	Start Call Back	40

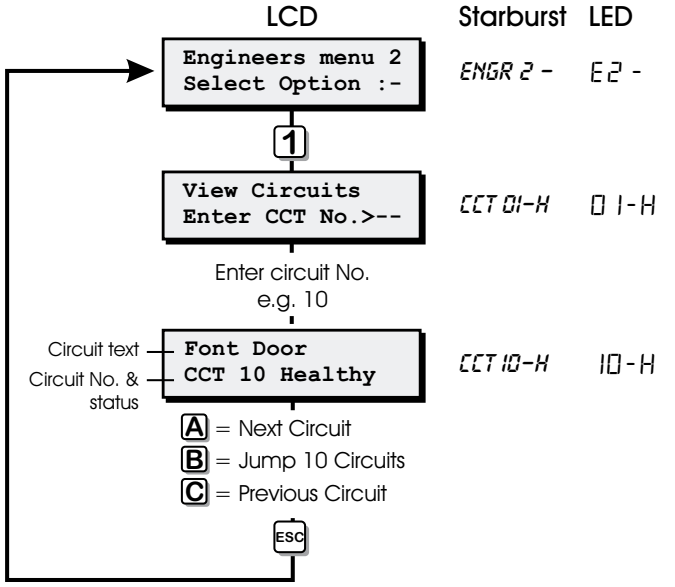


Engineer's Menu 2

View Circuits

Each detection circuit may be viewed to ascertain its status. The circuit status conditions and resistance are shown below:

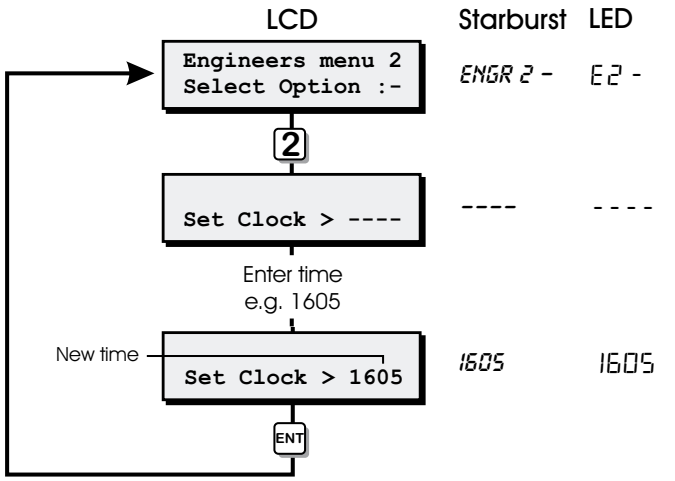
Status	Response	Normal	Min.	Max.
Healthy	None	2.2 KΩ	54 Ω	4.1KΩ
Active	Alarm	6.9 KΩ	4.1 KΩ	54 KΩ
Tamper	Tamper	∞	54 KΩ	∞
Shorted	Alarm	0 Ω	0 Ω	53 Ω



View Circuits Flowchart

Set System Time

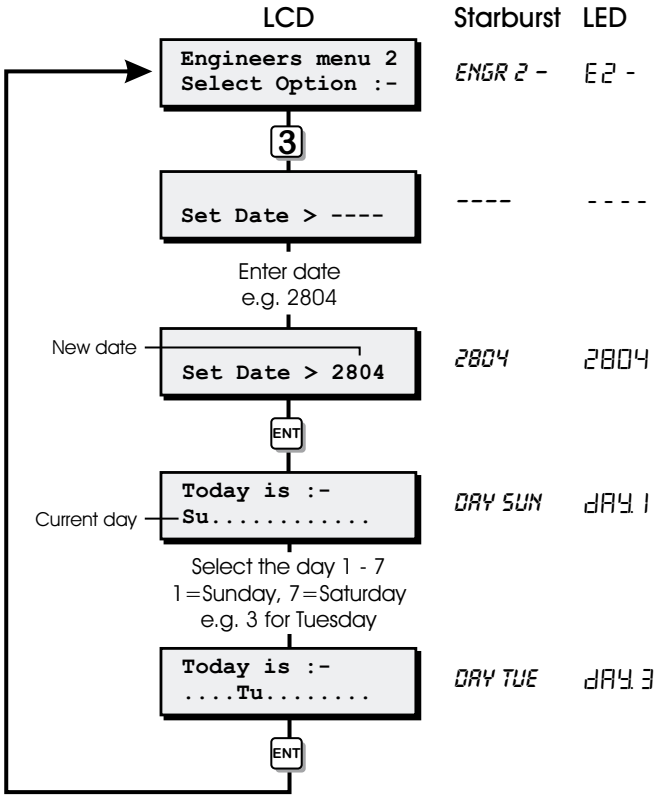
The system time is displayed in a 24hr format on all remote keypads and is also used to time stamp events in the system event log.



Set System Time Flowchart

Set System Date

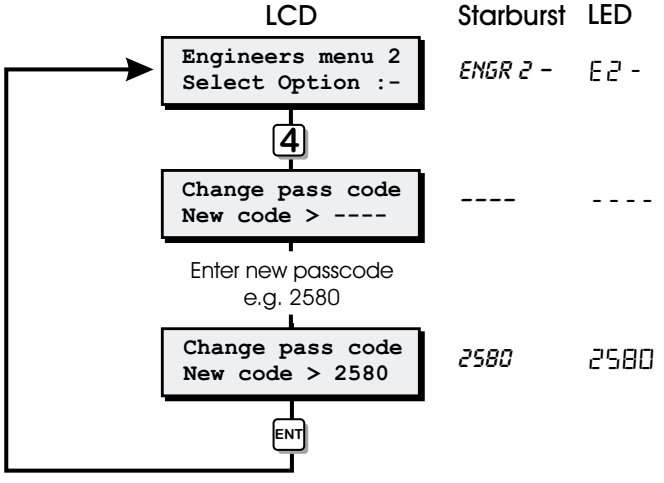
The system date is displayed in a day/date/month format on LCD remote keypads. it is also used to provide date stamps for events in the system log.



Set System Date Flowchart

Change Passcode

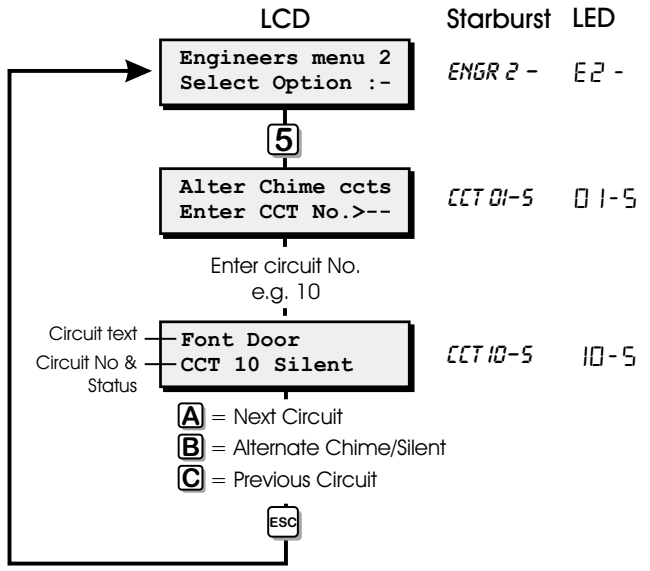
This option allows the engineer to change their passcode. The default passcode is 1234 but the installation engineer should change this to their own personal 4 digit passcode.



Change Passcode Flowchart

Chime Circuits

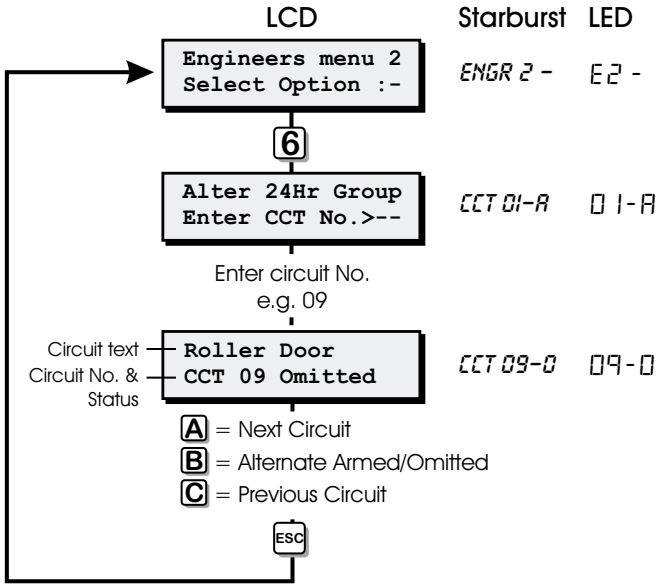
This option allows an alternative method of programming circuits as "chime".



Chime Circuits Flowchart

Alter 24Hr Group

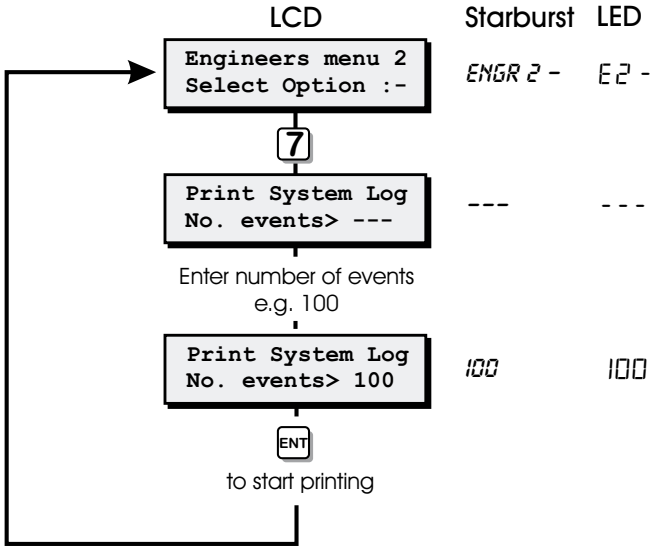
Circuit types "24hr" and "Auxiliary" with the "Omittable" attribute can be assigned to the 24hr group. The 24hr group is isolated by using user menu 1 option 6, see "User Manual".



Alter 24hr Group Flowchart

Print System Log

The system log stores 700 events (1800 when expanded), if a printer is connected to the system it is possible to print a selected number of events. Once the printout has been started it can only be stopped by selected this option again and entering "000" for the number of events.



Print System Log Flowchart

Configure Wards

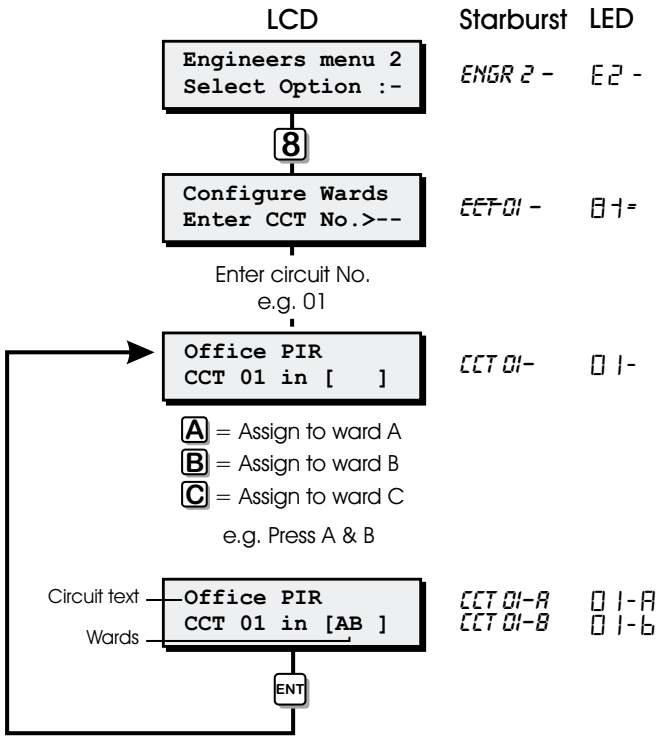
The TS790 and TS900 can be split into four wards (areas):

- System Ward
- Wards A
- Ward B
- Ward C

Each ward can then be assigned to passcodes or part-set buttons to allow flexible part-set arrangements. See "Part Set Groups" on page 43 and "Code Set Groups" on page 43.

Only "Night", "Final Exit" and "Exit terminator" circuit types can be assigned to wards A, B and C. Circuits can be assigned to more than one ward (A,B or C) thus creating overlapping areas. Circuits that are assigned to more than one ward will only be armed when both or all wards are set.

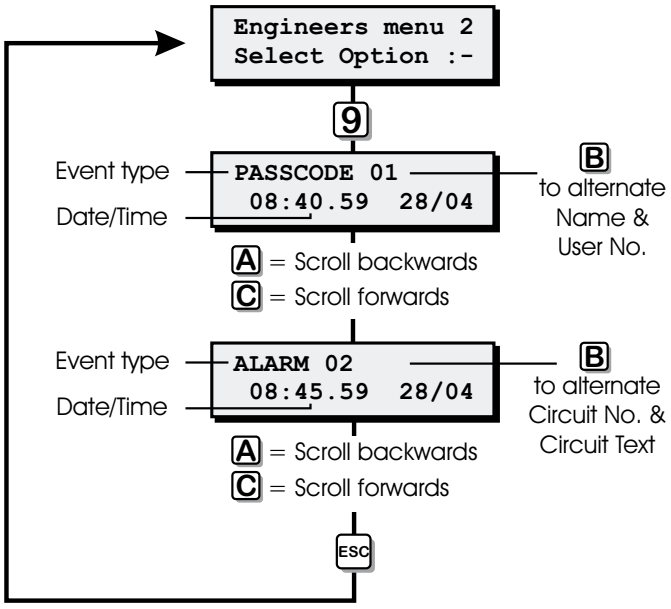
From the factory, all detection circuits are assigned to the system ward (i.e., they are not assigned to wards A, B or C). Circuits that remain assigned to the system ward can also be set or unset independently.



Configure Wards Flowchart

View System Log

The engineer can use this option to view the system log. The [A] and [C] keys allow you to scroll backwards and forwards through the log events.



View System Log Flowchart

Log Event Codes

LCD	Starburst	LED	Description
ACTION ALARM	ALM SENT	AA	Bell output activated when system is part-set.
AC OFF	A.C. OFF	PF	Mains power removed.
AC RESTORED	A.C. ON	Pr	Mains power restored
ACCESS 01-31	ACC 55 01-31	Ac.01-31	Access user passcode (01-31) entered.
ALARM 01-56	ALARM 01-56	CA.01-56	Full alarm from circuit (01-56).
ALARM DELAYED 01-56	DELAY 01-56	Ad.01-56	Delayed alarm during a part-set condition.
AUX/BELL TAMPER	AUX TAMP	At	Auxiliary tamper activated.
AUXILIARY 01-56	AUX 01-56	Au.01-56	Auxiliary circuit activated.
BATTERY FAULT	BATT FLT	bF	Battery fault (voltage below 10.5V).
BELL TESTED	BELL TST	bt	External bell and strobes tested.
CALL BACK No. 01-03	C. BACK 01-03	Cb.01-03	Modem making a call back to remote PC.
CCTS ISOLATED	24HR OM T	C 1	24Hr group omitted during the unset condition.
CCT OMITTED	OMIT 0 01-56	C0.01-56	Circuits omitted by the user at time of Setting.
CIRCUITS TESTED 01-56	TEST 0 01-56	tc.01-56	The number of circuits tested during Walk Test.
CODE TAMPER	C.TMP 01-04	Pt.01-04	Code tamper from keypad 01-04
COMMS ACTIVE	COM ACT	cA	Plug-on digicom active.
COMMS FAILED	COMS FLT	cF	Plug-on digicom failed to communicate.
COMMS SUCCESSFUL	COMS OK	cc	Plug-on digicom communicated successfully.

Log Event Codes

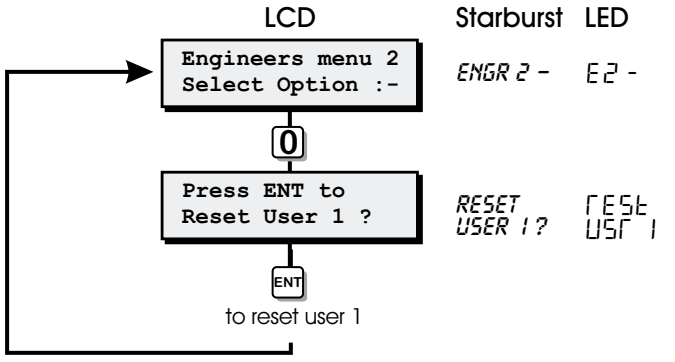
LCD	Starburst	LED	Description
DATE CHANGED	DATE CHG	dc	System Date changed.
DEFAULT CODE	DEFLT 01	dF	User passcode (01) reset to 5678 by the engineer.
DURESS 01-31	DUR SS 01-31	du.01-31	Duress alarm from user passcode (01-31).
ENTRY 01-56	ENTRY 01-56	En.01-56	Entry timer started by circuit (01-56).
ENTRY ALARM 01-56	EN.ALM 01-56	EA.01-56	Entry timed-out alarm from circuit (01-56).
FACTORY RESTART	FACT. RST	Fr	System "Factory Restarted".
FIRE ALARM 01-56	FIRE 01-56	FA.01-56	Fire alarm circuit activated.
FIRST KNOCK 01-56	FIRST 01-56	Fn.01-56	The first activation of a Double Knock circuit.
FUSE BLOWN 01	FUSE 01	Fb.01	Control Panel 12V Auxiliary Fuse blown.
INACTIVE CCTS 01-56	INACT 01-56	IA.01-56	Inactive circuits during the Unset condition.
KEY POINT 01-56	KEY.SW 01-56	Sa.01-56	Key point operation from circuit (01-56).
LINE FAULT	LINE FLT	LF	Telephone line fault detected.
LINE RESTORED	LINE OK	Lr	Telephone line fault restored.
MODEM LOCK-OUT	LOCK-OUT	LO	Modem failed to communicate.
NO EVENT	NO EVENT	--	No log event.
NODE ADDED 01-05	N.ADD 01-05	nA.01-05	Node added to the system.
NODE FUSE 01-05	N.FUSE 01-05	nF.01-05	Node fuse blown.
NODE REMOVED 01-05	N.REM 01-05	nr.01-05	Node removed from the system.
NODE TAMPER 01-05	N.TMP 01-05	nt.01-05	Node cover removed.
ON-SITE RESTART	SITE. RST	Sr	System "On-Site" restart.
OMITS REMOVED	OMIT REM	Or	Previously omitted circuits reinstated.
PA ALARM 01-56	PA.ALM 01-56	PA.01-56	Panic Alarm circuit activated.
PA CODE 01-31	PANIC 01-56	PC.01-31	Panic Alarm passcode entered.
PANEL LID TAMPER	LID TAMP	Lt	Control panel lid removed.
PART SET A/B/C	P.SET A/B/C	PSA/b/C	System Part-Set using one of the A, B, or C buttons.
PASSCODE 00-31	USER 00-31	Ur.00-31	User passcode entered. (00-31).
PSU OVERLOAD	OL	OL	Power suppy current exceeded.
REMOTE ADDED 01-04	R. ADD 01-04	rA.01-04	Remote Keypad added to the system.
REMOTE RESET	REM RST	rc	System reset by "Remote Reset" passcode.
REM REMOVED 01-04	R. REM 01-04	rr.01-04	Remote Keypad removed from system.
REM SERVICE CALL	R.S. CALL	SC	Remote service call via "Lineload" software and PC.
REM TAMPER 01-04	R. TMP 01-04	rt.01-04	Remote Keypad cover removed.
SERVICE CALL END	R.S. END	SE	Remote service call finished.
SERVICE REQUIRED	SERVICE	rS	Service required
SET FAIL	SET FAIL	SF	System failed to Set.
SET WARD A/B/C/S	W. SET A/B/C/S	St.AbCS	Wards A, B, C or System Set.
SYSTEM OPEN	SYS OPEN	OP	System fully unset.
SYSTEM RE-ARMED	RE-ARMED	rA	System re-armed all healthy circuits.
SYSTEM SET	FULL SET	FS	System fully set.

Log Event Codes

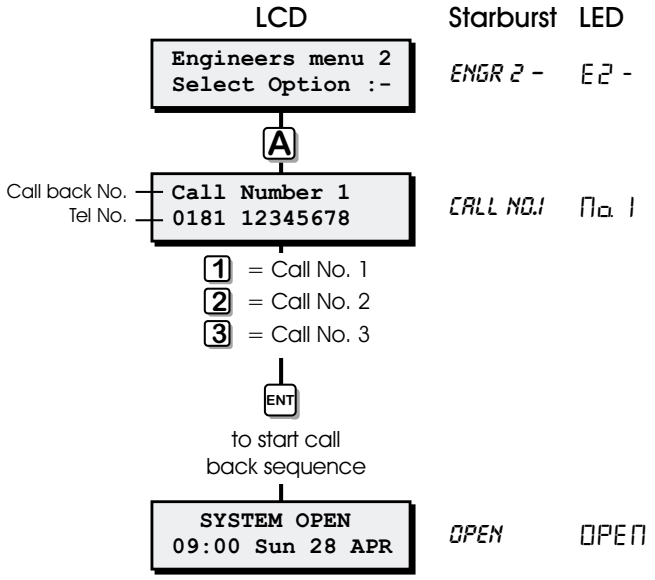
LCD	Starburst	LED	Description
TAMPER 01-56	TAMP'R 01-56	tA.01-56	Tamper alarm from circuit.
TEST CCTS OFF	TEST OFF	to	All circuits taken off "Test"
TEST FAIL 01-56	T. FAIL 01-56	tF.01-56	Circuit failed during "Test".
TIME CHANGED	TIME CHG	tc	System time changed
UNSET WARD A/B/C/S	UNSET A/B/C/S	UnAbCS	Wards A, B, C or System Unset.
WALK TEST	WALK TST	ct	System "Walk Test" selected.

Reset User Code 1

This option allows the installation engineer to reset the master user (user 01) back to the factory default code of "5678". This feature is useful when the master user has forgotten their passcode or has accidentally changed it without realising. This operation is logged.



Reset User Code Flowchart



Start Call Back Flowchart

Start Call Back

If the system is fitted with a DC58M digi-modem, it is possible for the installation engineer to initiate an upload sequence to a remote site (normally the alarm company). Once the communication link is established with the remote site, data can be sent and received from the control panel. This feature is only compatible with Menvier Lineload software version 2.2 or above.

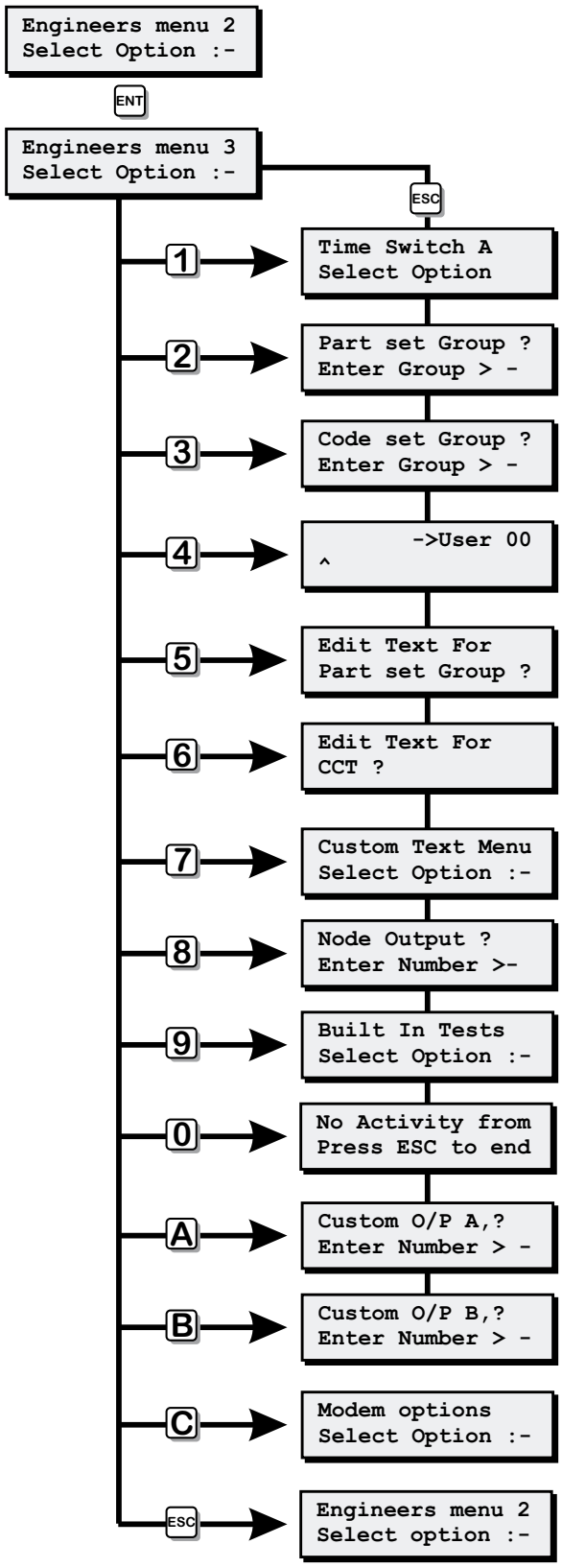
Engineers Menu 3

Introduction

Engineers menu 3 is selected by pressing the [ENT] whilst Engineers menu 2 is selected. Each menu option can be selected by pressing the relevant "Hotkey".

Menu Contents

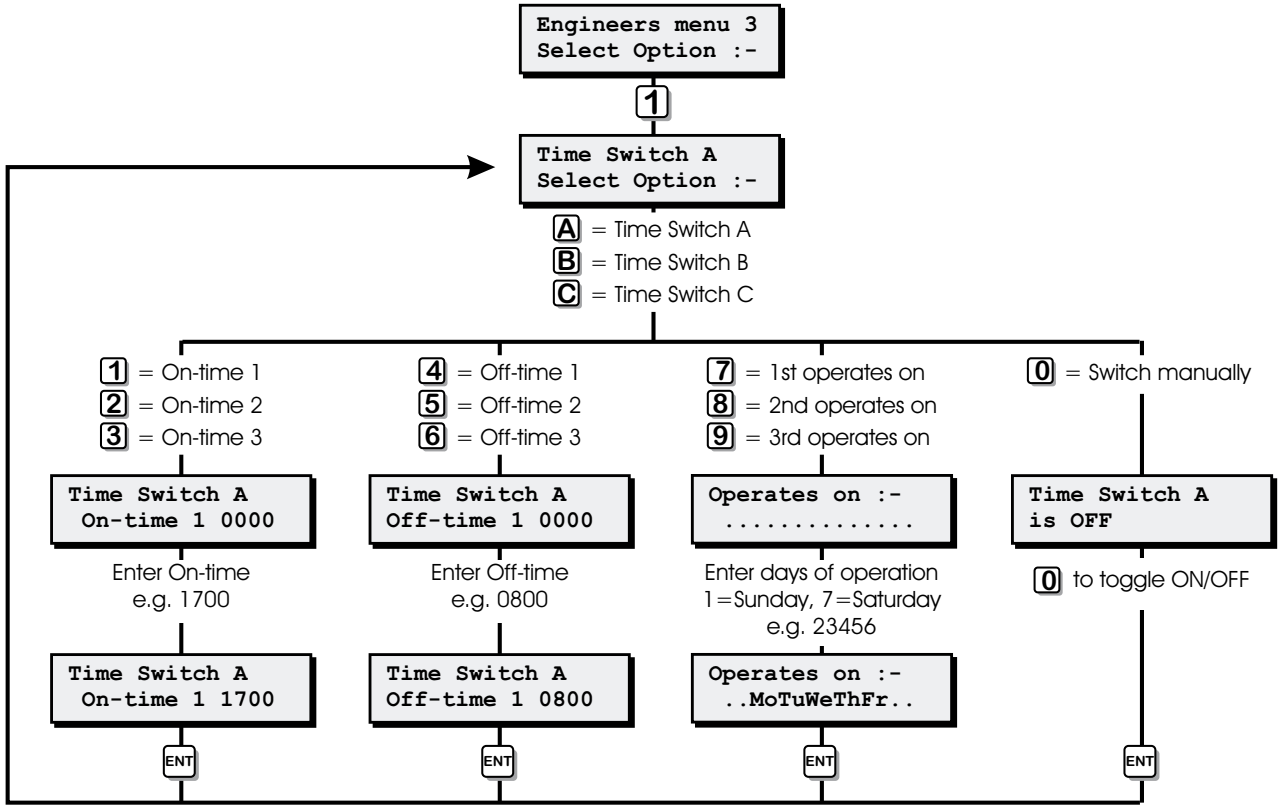
Hotkey	Option	Page
1	Program Time Switches	42
2	Program Part Set Groups	43
3	Program Code Set Groups	43
4	Edit Engineers Name	44
5	Edit Part Set Text	44
6	Program Circuit Text	44
7	Custom text Menu	44
8	Program Node Outputs	45
9	Built In Test Menu	45
0	View Activity Count	46
A	Program Custom Output A	47
B	Program Custom Output B	47
C	Modem Options	48



Engineers Menu 3

Time Switches

The TS790/TS900 has three programmable time switches. Each time switch can be programmed with up to three separate on/off times and made to operate on any day of the week. The time switches can be assigned to outputs which in turn can be used to control internal or external lighting via a relay etc.



Time Switches Flowchart

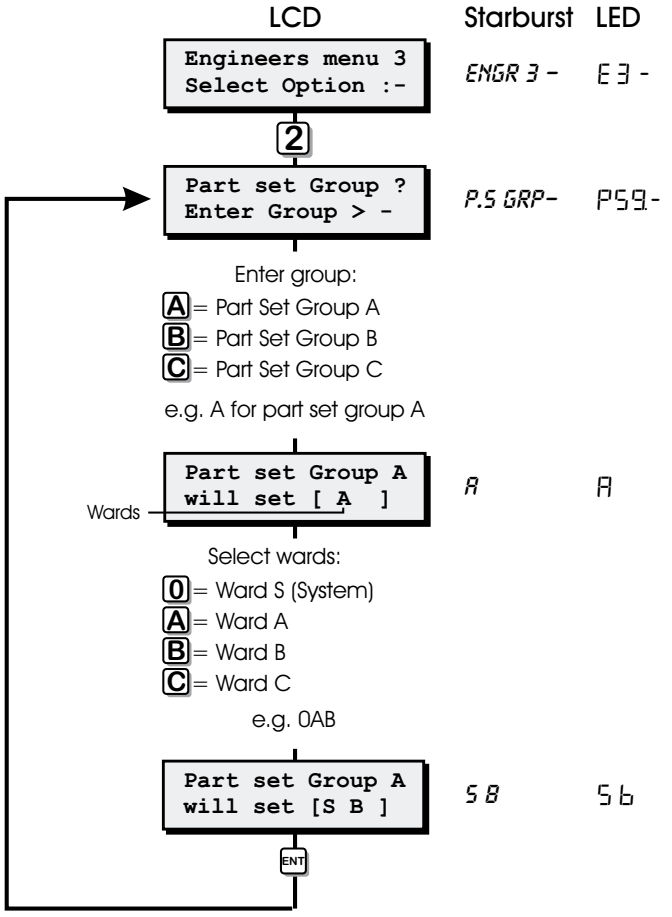
Part Set Groups

This option allows the engineer to define how the three part set buttons operate. Each group can be programmed so that it sets any combination of wards. For example "PART SET GROUP A" could be allocated wards A and C, whereas "PART SET GROUP B" could be allocated wards A and B.

Each "Part Set Group" can also have up to 32 characters of text assigned, *see "Edit Text For Part Set Groups" on page 44.*

Part Set Group Operation

When a "Master" or "Standard" user passcode is entered during the unset mode the system will attempt to fully set after a five second delay. However, if during the five second delay one of the part set buttons [A], [B] or [C] is pressed, the display will show relevant "Part Set Text" and after a short delay the system will set the wards that are assigned to the selected "Part Set Group".



Part Set Groups Flowchart

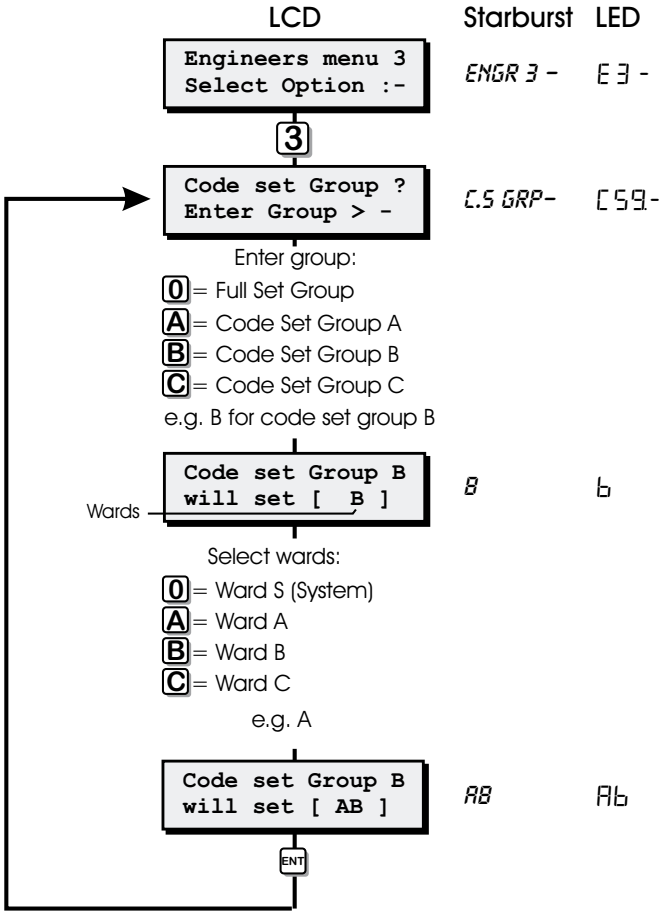
Code Set Groups

This option allows the engineer to define how the four code set groups operate. Each group can be programmed so that it sets any combination of wards. For example "CODE SET GROUP A" could be allocated wards A and C, whereas "CODE SET GROUP B" could be allocated wards A and B.

Code Set Group Operation

When the system is unset and a "Code Set Group" passcode is entered the selected wards will set after the setting procedure is followed. e.g., If "Code Set Group A" is defined as above then when the passcode is entered it will set wards A and C. If the system is fully set and the passcode is entered it will unset wards A and C.

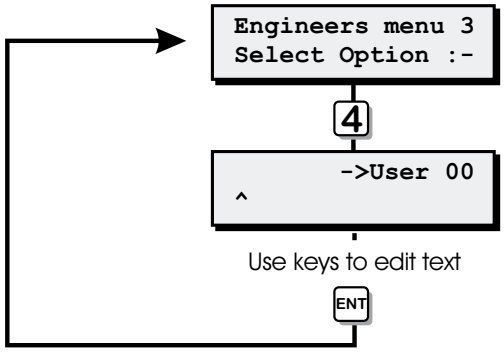
The "Code set Group" passcodes are programmed by the master user within "User menu 2" (see User Manual).



Code Set Groups Flowchart

Engineers Name (LCD Only)

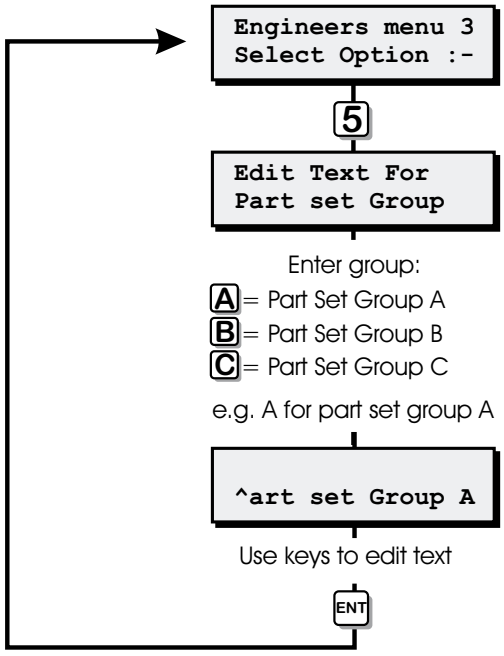
This option allows the engineer to assign a name (7 characters) to user 00. When using the view log option you can press the [B] key to alternate between displaying the user number and user name.



Engineers Name Flowchart

Part Set Text (LCD Only)

This option allows the engineer to assign 32 characters of text to each part set group. When the user selects the part set options during setting,

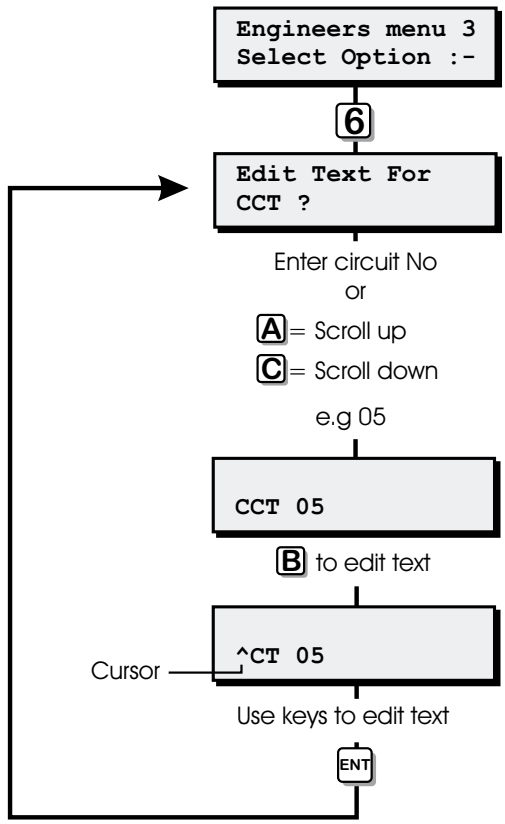


Part Set Text Flowchart

the display will show the relevant part set text.

Circuit Text (LCD Only)

Each detection circuit can have up to 16 characters of text assigned to it.



Circuit Text Flowchart

Custom Text Menu (LCD Only)

This menu option allows the installation engineer to edit the following text messages:

Reset Message

The default reset message "CALL ENGINEER TO RESET SYSTEM" can be personalised by the engineer, e.g. the message may be programmed to read "CALL XYZ ALARMS ON 0181-1234567".

Banner Message

Normally when the system is unset the bottom line of the display shows the time and date, and the top line is left blank. This menu option allows the engineer to program or edit a 16 character "Banner" message which is displayed on the top line. This may be used to display the company's name, e.g., "Blogg Alarms", "ABC Security" etc.

Location Text

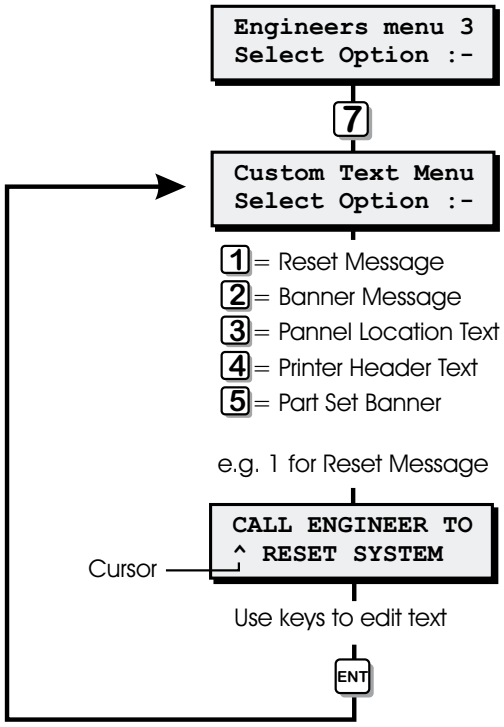
This option allows the engineer to program a 32 character location message. When "Engineers menu 1" is selected the engineer can view this message. This can be used to provide the location details for the control panel, e.g., "C P located in reception area", thus assisting service engineers unfamiliar with the site.

Printer Header

This option allows the installation engineer to program a 32 character printer header message. This is printed whenever a system or log printout is taken from the system. This can be used as a site reference, e.g., "ABC Company Job No123456".

Part Set Banner

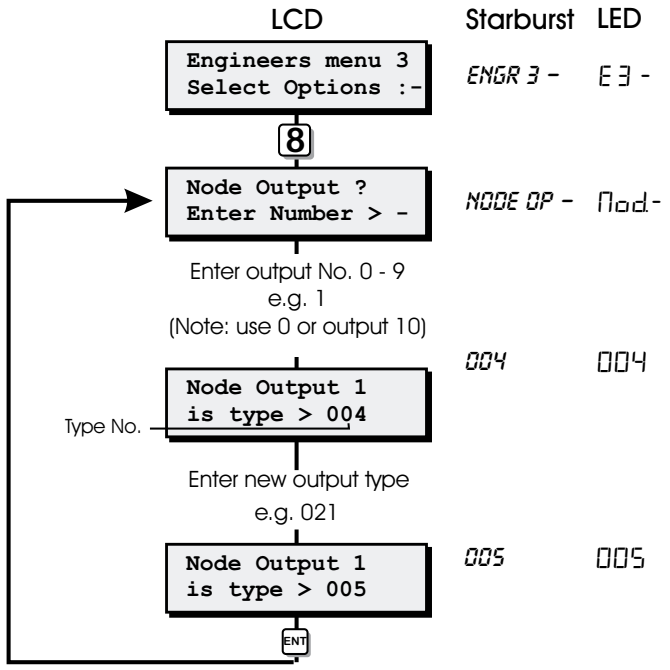
The part set banner is a 16 character message displayed on the top line of the display whenever the system is part set. If the message is left blank the top line of the display will show the wards that are set. If the message is programmed the top line of the display will show the message, e.g., "System Part-Set".



Custom Text Menu

Node Outputs

This option allows the engineer to program the two outputs on each Node. Each output can be programmed to any of the output types shown on page 22.



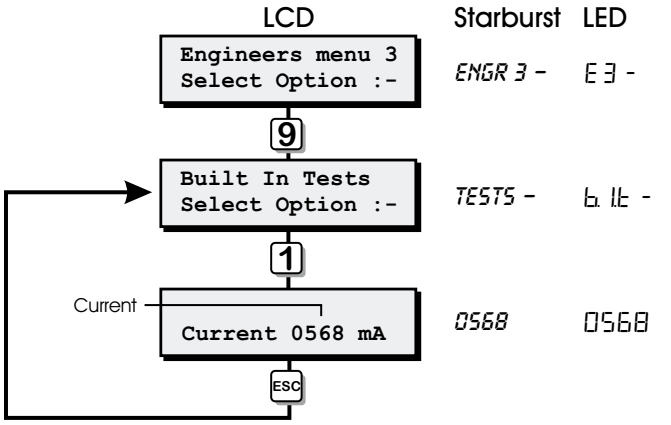
Node Outputs Flowchart

Built In Tests

The TS790/TS900 system has the following diagnostic routines:

Current Consumption

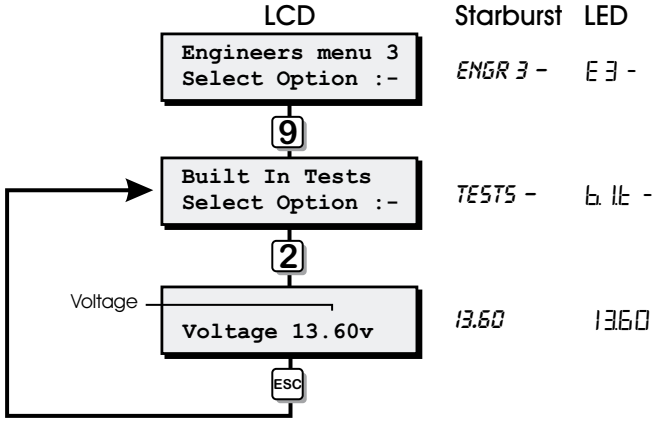
When this test option is selected the total current consumption for the system is displayed, the accuracy of this measurement is ± 50mA.



System Current Flowchart

Voltage

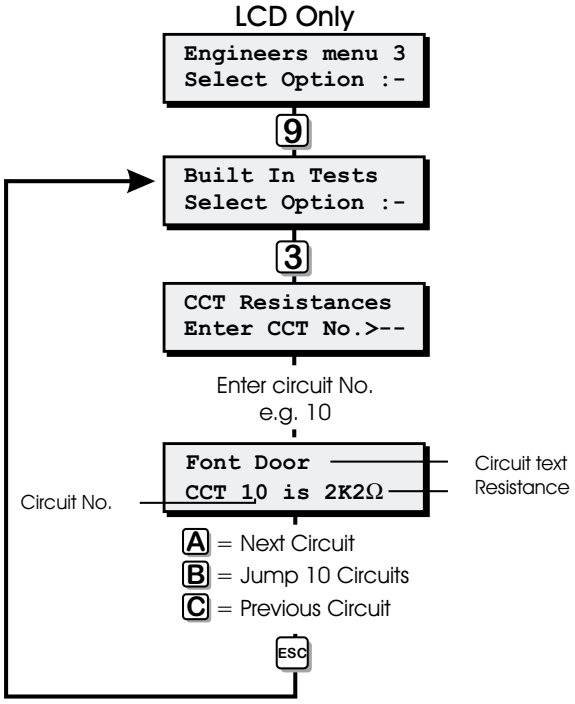
When this test option is selected the battery charging voltage at the control panel is displayed, the accuracy of this measurement is ± 0.2V.



System Voltage Flowchart

View Circuit Resistance (LCD Only)

When this test routine is selected the resistance for each detection circuit may be measured, the accuracy of this measurement is ± 0.1 KOhms.



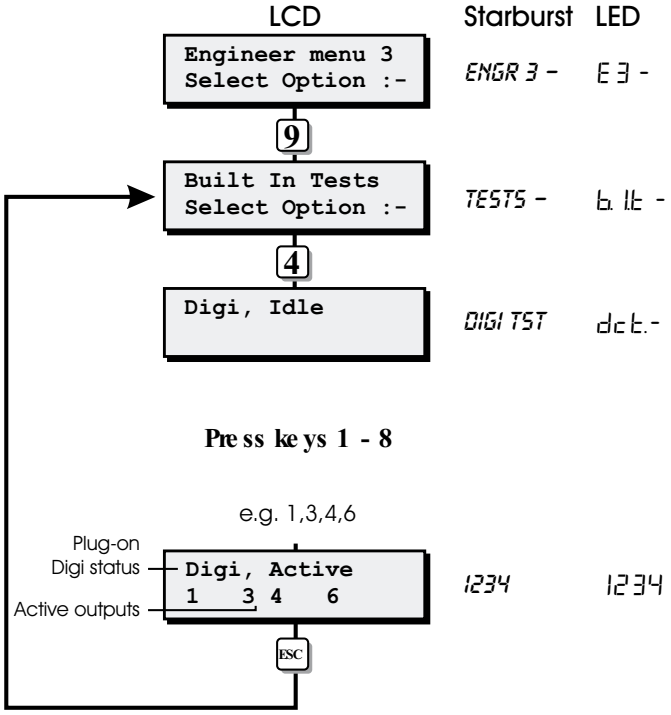
View Circuit Resistances

Test Digi Outputs

This test routine allows any outputs or digi channels that have been programmed as "FIRE", "P.A.", "ALARM" and "SET" to be tested.

If the system is fitted with a plug-on digicom the top line of the display will show the status of the communicator.

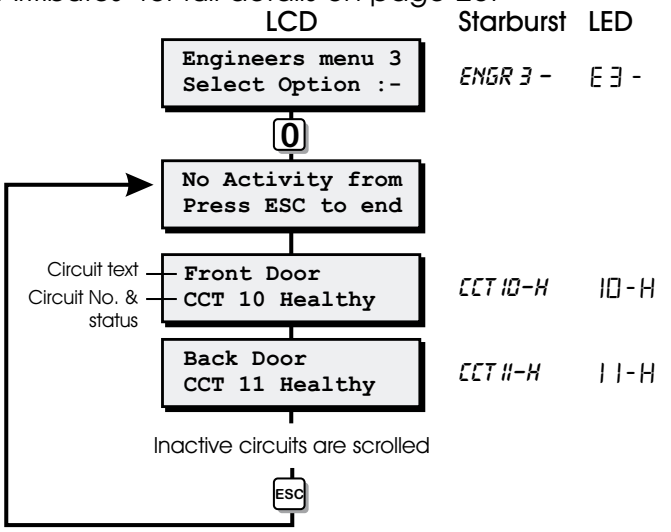
When you leave this test routine the digi channels and outputs are returned to their normal condition.



Test Digi Outputs Flowchart

View Inactive Circuits

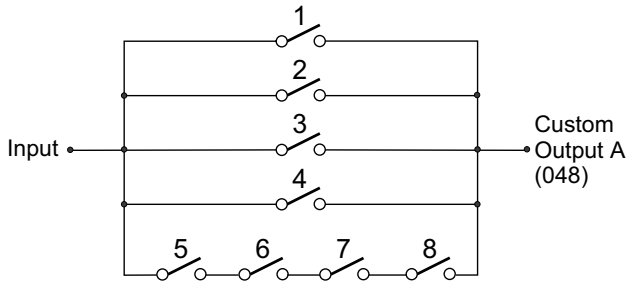
Circuits with the "Flagged" attribute that have not been activated whilst the system was unset can be viewed using this menu option, see "Circuit Attributes" for full details on page 26.



View Inactive Circuits Flowchart

Custom Outputs A & B

These options allows the engineer to program both custom outputs. The diagram below represents the logic circuit for the custom output.



Each switch in the diagram represents a programmable output type, therefore the custom output will only activate when the correct combination of output types are active.

Switches 1 - 4 perform a logical "OR" function and switches 5 - 8 perform a logical "AND" function.

Custom Output - Example 1

This example shows how the "OR" function can be used so that the "Custom Output" activates when circuit 0001 or 0005 or 0016 causes an alarm condition. The table below shows how each switch is programmed to achieve this.

OR		AND	
1	Circuit 001 Alarm	5	Always Off
2	Circuit 0005 Alarm	6	Always Off
3	Circuit 016 Alarm	7	Always Off
4	Always Off	8	Always Off

☞ *When using the "Custom Output" for "OR" logic only, all unused switches must be programmed to the type "Always Off".*

Custom Output - Example 2

This example shows how the "AND" function can be used so that the "Custom Output" only activates when the system is ward A is set and time switch A is active. The table below shows how each switch is programmed to achieve this.

OR		AND	
1	Always Off	5	Ward A Set
2	Always Off	6	Time Switch A
3	Always Off	7	Time Switch A
4	Always Off	8	Time Switch A

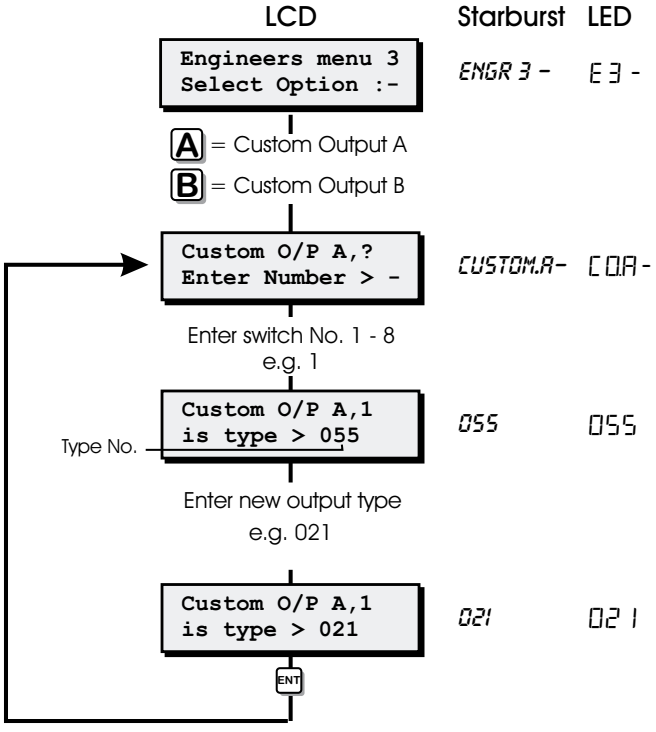
☞ *When using the "Custom Output" for "AND" logic only, switches 1-4 must be programmed to the type "Always Off" and any of the unused "AND" switches must be programmed to the same type as one of the used switches.*

Custom Output - Example 3

This example shows how to use both the "AND" and "OR" functions so that the "Custom Output" activates when ward A is set and time switch A is active or when the courtesy light output is active. The table below shows how each switch is programmed to achieve this.

OR		AND	
1	Courtesy Light	5	Ward A Set
2	Always Off	6	Time Switch A
3	Always Off	7	Time Switch A
4	Always Off	8	Time Switch A

☞ *When using the "Custom Output" for "AND" and "OR" logic, any of the unused "OR" switches must be programmed to the type "Always Off" and any of the unused "AND" switches (5-8) must be programmed to the same type as one of the used switches.*



Custom Outputs Flowchart

Modem Options (LCD Only)

This option allows the engineer to access the following modem options:

Call Back No.1

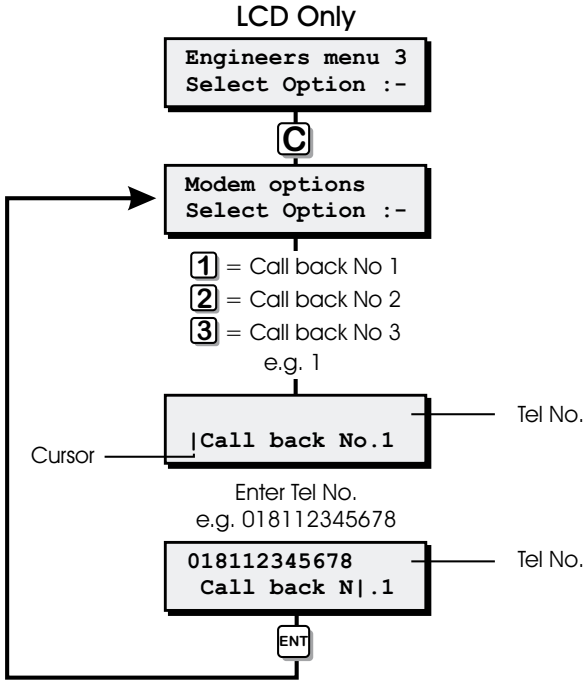
This option allows the first call back telephone number to be programmed.

Call Back No.2

This option allows the second call back telephone number to be programmed.

Call Back No.3

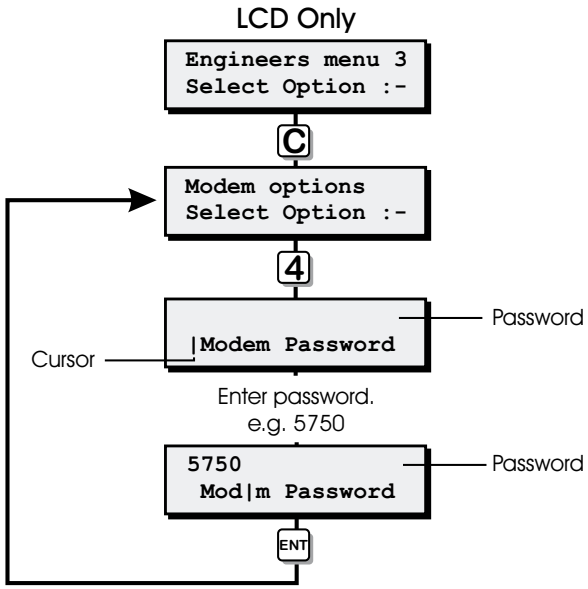
This option allows the third call back telephone number to be programmed.



Modem Call Back Numbers Flowchart

Modem Password

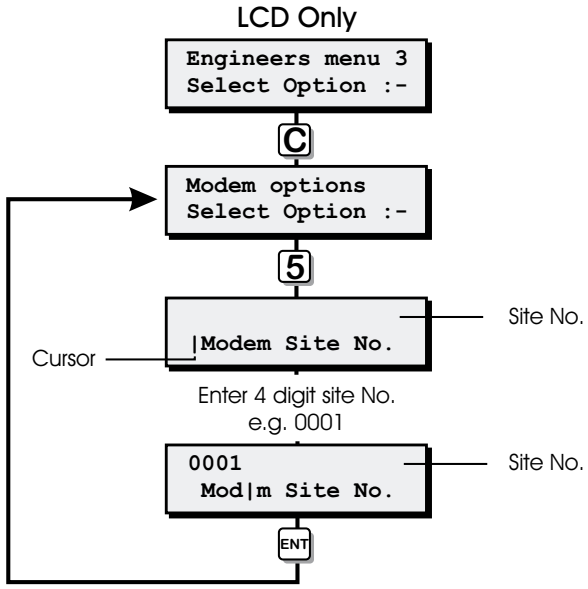
This option allows the modem password to be programmed. The "Modem Password" can be up to 16 character long and provides a means of security for remote communications. When using the "Lineload" software the "Modem Password" in the site profile must match the "Modem Password" that is stored in the control panel.



Modem Password Flowchart

Modem Site No.

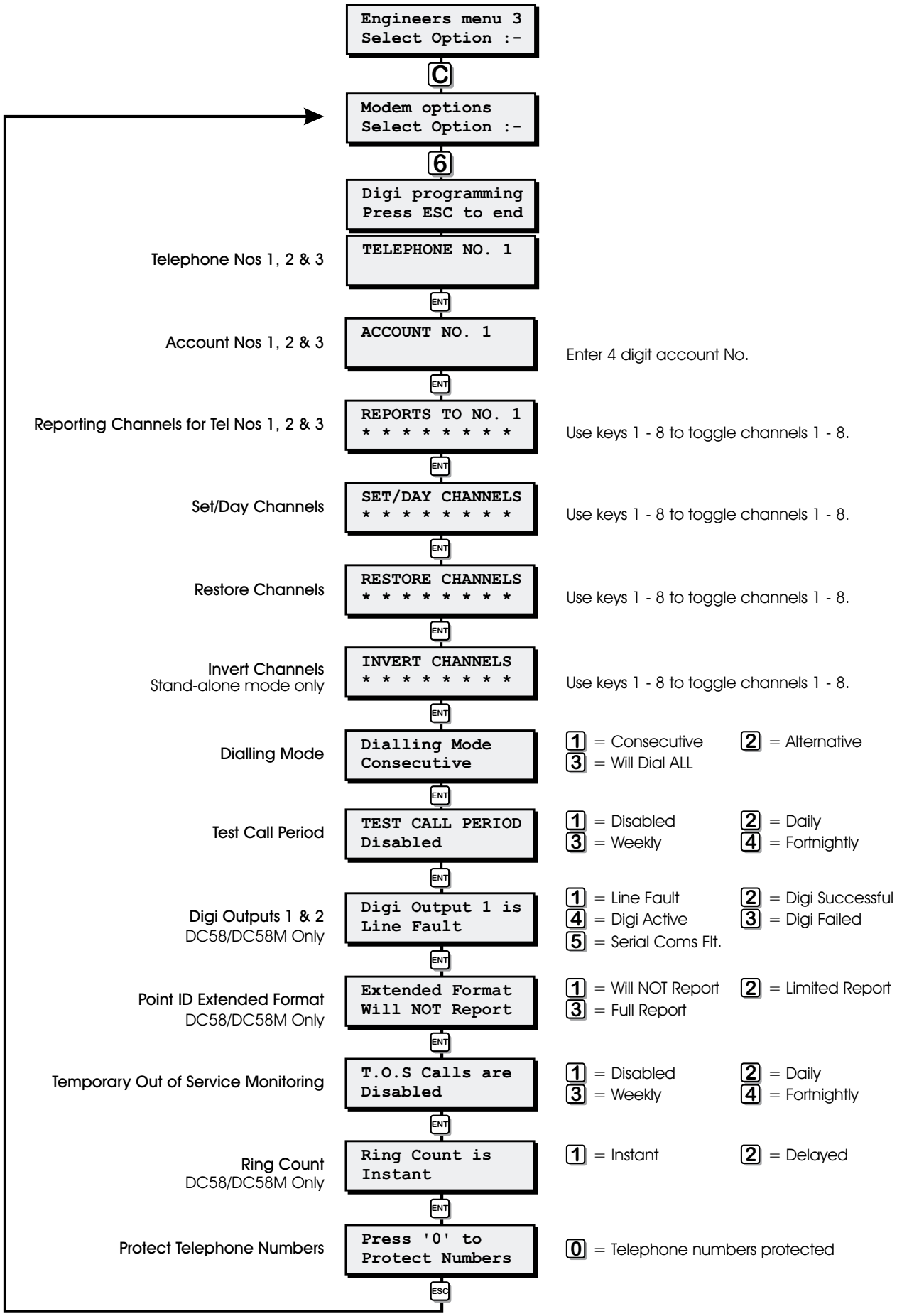
This option allows the Modem site number to be programmed. The "Modem Site No." is a 4 digit number that is used as a site reference. When using the "Lineload" software the "Site Reference" number in the site profile must match the "Modem Site No." that is stored in the control panel.



Modem Site Number Flowchart

Program Digicom

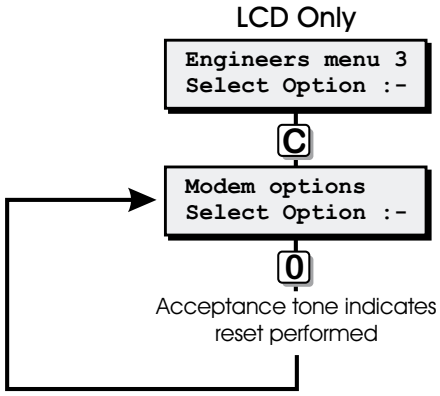
This option allows the plug-on digicoms DC54, DC58 and DC58M to be programmed via the control panel.



Program Digi Flowchart

Reset Digicom

When the system is powered up, the control panel logs-on the device that is connected to the digicom plug (JP3). If the device is changed or removed from the system you must either power the system down and back up again, or select this menu option in order for the device to be log-on again.



Reset Digicom Flowchart

Appendices

Point ID Extended Reporting

Point ID extended reporting is a new format which when used with the DC58 or DC58M can be used to report circuit ID data, user ID etc. In order to used this format the DC58/DC58M must be plugged on to the control panel and must also be programmed to report "Extended Format" *(refer to the instructions supplied with the DC58/DC58M).* The central station alarm receiver must also be capable of receiving "Point ID extended Format".

Point ID Reporting takes the following format: CCCC Q EEE GG ZZZ where:

CCCC Customer account number.

Q Event qualifier, where E = new event (1) and R = restore (3).

EEE Event code (see table below).

GG Always 00.

ZZZ Circuit/Point ID number reporting the alarm (001-056), or user number (001-031) for open/close reports. System status messages (Mains Fail, Walk Test, etc.) contain zeros in the ZZZ location.

Code	Description
110	Fire alarm
120	Panic (PA Code) alarm
121	Duress alarm
122	Silent PA alarm
123	Audible PA alarm
130	Intruder alarm
134	Entry alarm
135	24 Hour alarm
137	Equipment tamper alarm
150	Auxiliary alarm
301	Mains failure
302	Low system battery
305	System reset (on-site or factory)
309	Battery test failure
382	Node or Remote removed
383	Circuit tamper

Code	Description
401	Open / Close by user
406	Alarm cancelled
409	Open / Close by keyswitch
411	Call-back requested (Lineload)
412	Successful download access
413	Unsuccessful download access
570	Circuits omitted
572	24 Hour circuits omitted
601	Manual test trigger
602	Timed test call
607	Walk test mode selected
625	Date or time changed
627	Engineer program mode selected
628	Engineer program mode cancelled
382	Node or remote removed

Point ID Event Codes

Resetting the Engineers passcode

If the installation engineer has inadvertently changed the engineers passcode or the passcode has been forgotten, the passcode can be reset back to 1234 without losing any other programmed data. This procedure can only be used providing a user passcode is available:

1. Ensure that the system is unset and a user passcode is available.
2. Remove the cover from the control panel, this will cause a "Panel Lid tamper" alarm.
3. Ask the user to enter their passcode to silence the alarm.
4. Place the blade of a small screwdriver between the pins labelled "FACTORY RESTART". A multi-tone sound indicates the engineers passcode has been reset.
5. Replace the control panel cover. At the remote keypad enter 1234. The display will show "Engineers Menu 1". To change the engineer's passcode *see "Change Engineer's Passcode on page 36.*

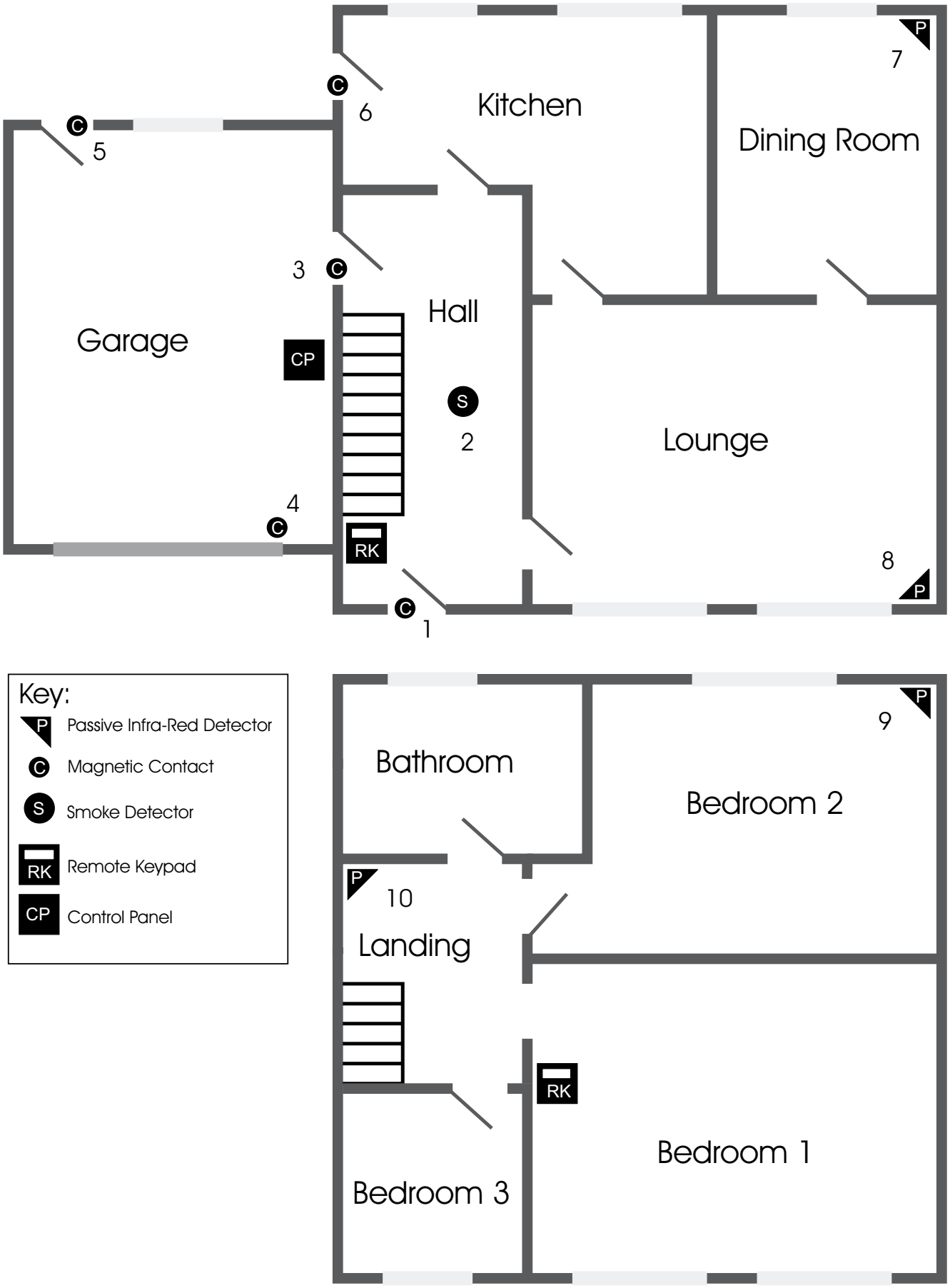


Figure 25 A Typical 3 Bedroom House

Domestic Part-Set Application Example

The TS790/900 is very flexible in the way that the system can be part-set. The system may be part-set by using the part-set buttons on the remote keypad or by using a part-set passcode.

The first application example shows how to use the part-set buttons to set different areas of a 3 bedroom house. The second example will show how to achieve the same results using a different approach. Try both and use the one you are happier with.

Defining Part-Set buttons to Omit a Ward

This is probably the easier method of configuring the part-set groups as you can easily take the information from a table and translate it directly into the ward programming details.

Using the drawing of a typical 3 bedroom house, the following part-set arrangements are required:

Part Set A Downstairs perimeter detection armed and downstairs internal detection armed.

Part Set B Downstairs perimeter detection armed, downstairs internal detection armed and bedroom 2 armed.

Part Set C Downstairs perimeter detection armed.

1. First create a table listing the circuits that are required to be Armed (A) and Omitted (O) for each part-set requirement:

Circuit	Location	P-Set A	P-Set B	P-Set C
01	Front Door	A	A	A
02	Smoke Detector	A	A	A
03	Hall door to garage	A	A	A
04	Garage door	A	A	A
05	Garage back door	A	A	A
06	Kitchen door	A	A	A
07	Dinning room PIR	A	A	O
08	Lounge PIR	A	A	O
09	Bedroom 2 PIR	O	A	O
10	Landing PIR	O	O	O

2. From the above Table create a second Table that details the ward assignment for each circuit. The rules for generating the second table are as follows:

   (a) Circuits that are armed in all three part set groups can be considered as being assigned to the "System Ward" and are NOT assigned to wards A, B or C.

   (b) Circuits that are omitted are assigned to their respective ward, e.g., circuit 09 is omitted for part set A and C, therefore it must be assigned to wards A and C.

3. The completed Table should look like the table shown below. Circuits with no ticks are assigned to the System Ward:

Circuit	Location	Ward A	Ward B	Ward C
01	Front Door			
02	Smoke Detector			
03	Hall door to garage			
04	Garage door			
05	Garage back door			
06	Kitchen door			
07	Dinning room PIR			✔
08	Lounge PIR			✔
09	Bedroom 2 PIR	✔		✔
10	Landing PIR	✔	✔	✔

4. From the above Table assign circuits 01-10 to their relevant wards *(see "Configure Wards" on page 37).*

5. Program the Part set groups *(see "Part set Groups", on page* 43). This ensures that when the user selects button A, B or C the system omits the correct ward. When using this method, the part set groups MUST be programmed as follows:

   Part Set Group A = [S BC] (Omits Ward A)

   Part Set Group B = [SA C] (Omits Ward B)

   Part Set Group C = [SAB] (Omits Ward C)

   ☞ ***When defining part set groups it is important to remember that circuits assigned to more than one ward will only be armed when all the wards its assigned to are set. e.g., the Landing PIR will only be armed when ward A, B and C are set (i.e., Full set in our example).***

Defining Part-Set buttons to Arm a Ward(s)

This method of defining the part set groups requires you to think of the system in terms of separate areas of protection (Wards), then configuring the part set groups so that different combinations of wards are set.

1. From the previous part-set requirements assign the different physical areas to wards, e.g.:

   Ward A: Downstairs perimeter detection (Circuits 01,04, 05 & 06).

   Ward B: Downstairs Internal detection (Circuits 03, 07 & 08).

   Ward C: Bedroom 2 (Circuit 09).

2. Using the above ward requirements create a Table for assigning circuits to wards. Circuits with no ticks are assigned to the "System Ward":

Circuit	Location	Ward A	Ward B	Ward C
01	Front Door	✔		
02	Smoke Detector			
03	Hall door to garage		✔	
04	Garage door	✔		
05	Garage back door	✔		
06	Kitchen door	✔		
07	Dinning room PIR		✔	
08	Lounge PIR		✔	
09	Bedroom 2 PIR			✔
10	Landing PIR			

3. From the above Table assign circuits 01-10 to their relevant wards *(see "Configure Wards" on page 37).*

4. Program the part set groups, *see "Part set Groups", on page 43*. This ensures that when the user selects button A, B or C the system arms the correct wards. When using this method, the part set groups are programmed as follows:

   Part Set Group A: [AB]

   Part Set Group B: [ABC]

   Part Set Group C: [A]

   ☞ *This method will only work correctly if circuits are assigned only to one ward. If a circuit is assigned to more than one ward, it will only be armed when all the wards its assigned to are set.*

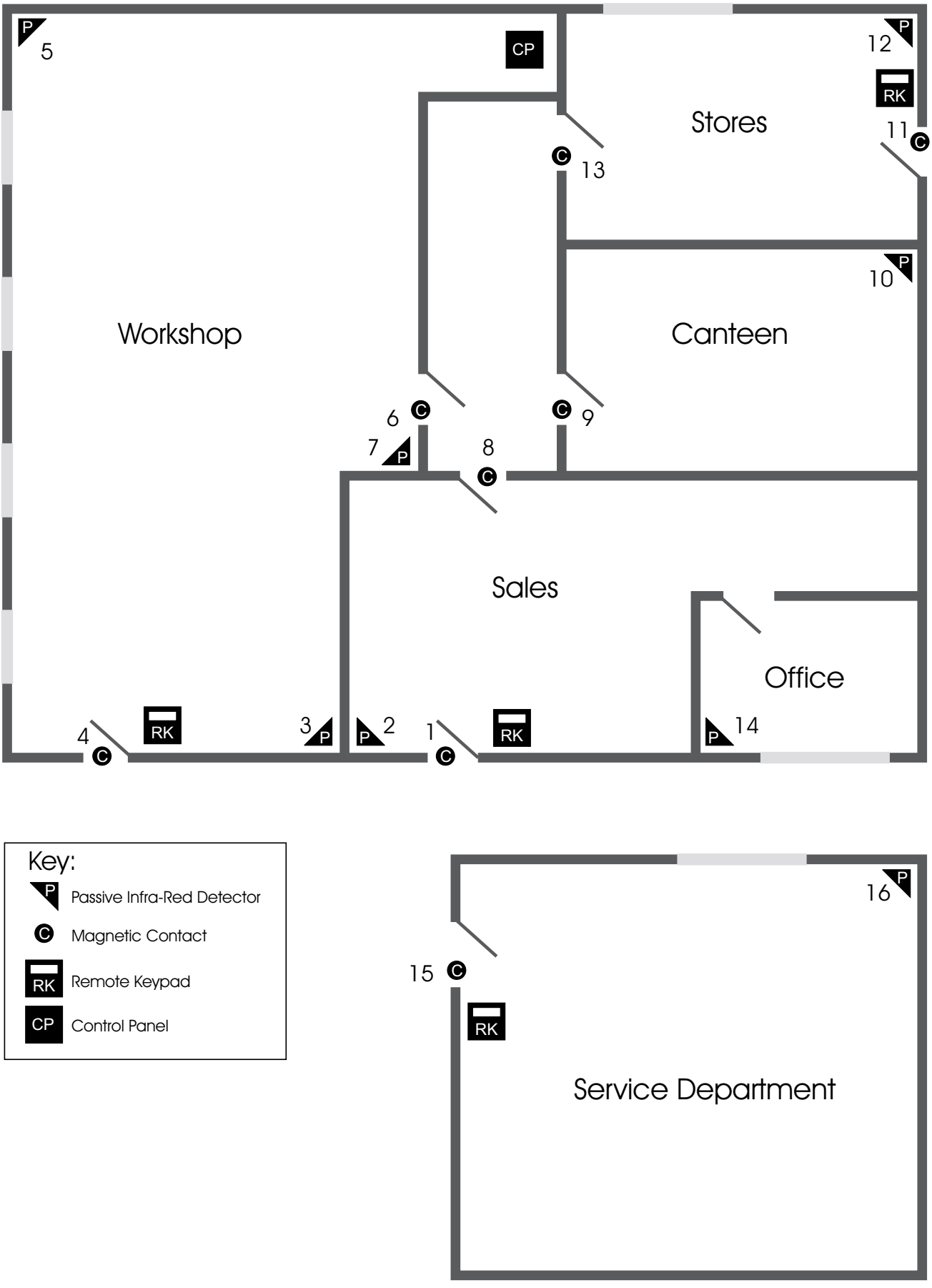


Figure 26 Commercial premises

Commercial Part-Set Application

This application example shows how to use the "Code Set Groups" to set and unset different areas within a commercial premises. Using the drawing of the building the following is required:

- The Sales Manager requires independent access to the Sales department and the Canteen.
- The Workshop Manager requires independent access to the Workshop area and the Canteen.
- The Stores Manager requires independent access to the Stores area and the Canteen.
- The Service Manager requires independent access to the Service department.

1. From the above requirements assign each area to a ward, e.g.:

   Ward A: Sales department and Canteen.

   Ward B: Workshop and Canteen.

   Ward C: Stores and Canteen.

   System Ward: Service department.

2. Using the above ward requirements create a Table for assigning circuits to wards. Circuits with no ticks are assigned to the "System Ward":

Circuit	Location	Ward A	Ward B	Ward C
01	Sales Entrance Door	✔		
02	Sales PIR	✔		
03	Workshop PIR (1)		✔	
04	Workshop Entrance		✔	
05	Workshop PIR (2)		✔	
06	Workshop door		✔	
07	Workshop PIR (3)		✔	
08	Sales Internal Door	✔		
09	Canteen Door	✔	✔	✔
10	Canteen PIR	✔	✔	✔
11	Stores Entrance			✔
12	Stores PIR			✔
13	Stores Internal Door			✔
14	Sales (Office PIR)	✔		
15	Service Entrance			
16	Service PIR			

☞ *The canteen door and PIR are assigned to wards A, B and C, this will ensure that they are only armed when all three wards are set. This allows access to the canteen when any of the wards A, B or C are unset.*

3. From the Table assign circuits 01-16 to their relevant wards *(see "Configure Wards" on page 37).*

4. *Program the code set groups (see "Code set Groups", on page 43).*This ensures that when the user enters their passcode the correct ward set or unsets. For this application example the code set groups are programmed as follows:

   Full Set Group: [S]

   Code Set Group A: [A]

   Code Set Group B: [B]

   Code Set Group C: [C]

5. Assign each "Code Set Group" with a passcode. For full details of programming the user passcodes refer to the User Manual.

Key Point Application Example

This application example shows how to use the "Key Point" circuit to fully set and part-set the system using a three position keyswitch. The Keyswitch is mounted in an electrical blanking plate together with an LED to indicate circuit faults when setting and part-setting the system.

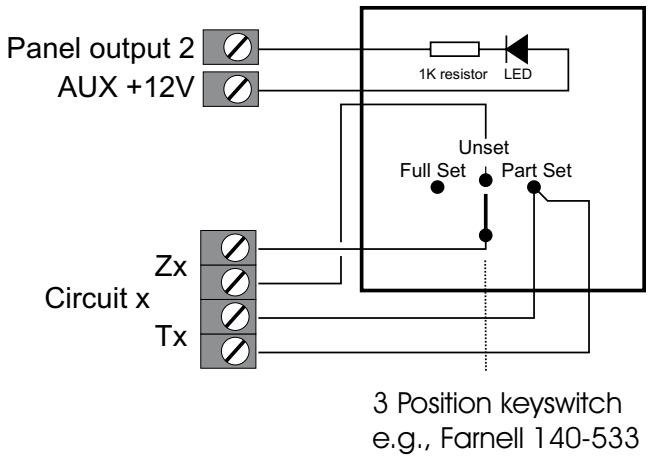


Figure 27 Key Point Wiring Details

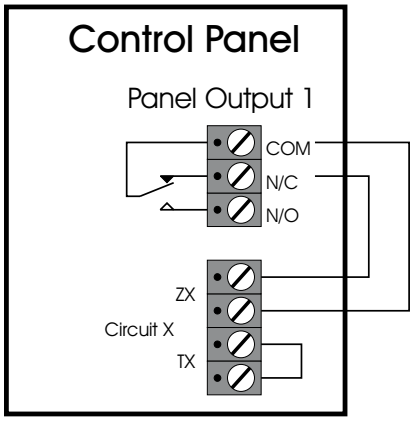
1. Program the Detection Circuit as a "Key Point" and set the attributes as "F * * * |* A * *". The "F" attribute indicates that the "Full Set Group" is selected when the keyswitch is switched from "Healthy" to "Active". The "A" attribute indicates that "Code Set Group A" is selected when the keyswitch is switched from "Healthy" to "Shorted".
2. Program the code set groups so that the correct combination of wards are set and unset. In this example the code set groups are set as follows:

   Full Set Group: [SABC]

   Code Set Group A: [AB]
3. Program panel output 2 as "General Fault" (044), this will provide a visual indication that one or more circuits are in error when setting the system.

Time Switch Application Example

This application example shows how to use "Time Switch A" and the "Key Point" circuit to set and unset the system. The time switch will be programmed so that panel is automatically set at 18:00 and unset at 08:00 from Monday to Friday, and will then remain set over the weekend.



Panel Output 1 is programmed as:
"Time Switch A" (040)

Circuit X is programmed as:
"Keypoint" with the attributes set as:
"F*** | ****".

Figure 28 Time Switch Wiring

1. Program the Detection Circuit as a "Key Point" and set the attributes as "F * * * |* * * *". The "F" attribute indicates that the "Full Set Group" is selected when the circuit changes from "Healthy" to "Active". *See "Program Circuits and Attributes", on page 25).*
2. Program the code set groups so that all wards are set and unset for the "Full Set Group" *(see "Code set Groups", on page 43):*

   Full Set Group: [SABC]
3. Program Panel Output 1 as "Time Switch A" (040), this is used to switch the "key Point" circuit from "Healthy" to "Active". *See "Panel & Remote Keypad Outputs", on page 22.*
4. Program "Time Switch A" as follows, *see "Time Switches", on page 22.*:

	Timer 1	Timer 2	Timer 3
On Time	18:00	00:00	00:00
Off Time	08:00	00:00	00:00
Mon	✔		
Tue	✔		
Wed	✔		
Thu	✔		
Fri	✔		
Sat			
Sun			

Alarm Abort & Confirmation

Both the TS790 and TS900 support "Alarm Abort" and "Sequential Confirmation". The alarm abort can be achieved by either sending an abort signal on a dedicated channel (normally channel 7) or by restoring the alarm channel.

Alarm Abort Operation

When the alarm is triggered the system transmits a Channel 3 (Alarm) to the central station. If the system is unset within the "Abort Delay" period the abort output is triggered and Channel 7 (Abort) is transmitted to the central station.

Sequential Confirmation Operation

When the first alarm is triggered, the system transmits Channel 3 (Alarm) to the central station. If a different zone is activated the system transmits Channel 8 (Second Alarm).

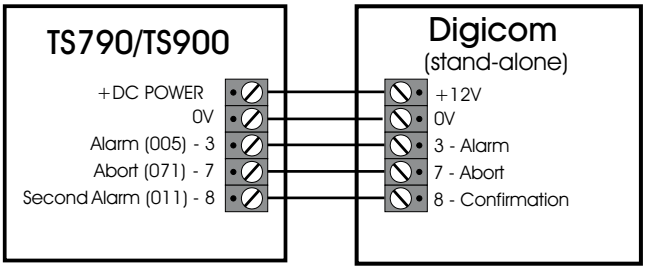


Figure 29 Alarm Abort & Sequential Confirmation

1. If a plug-on digicom is being used program the digicom channels as shown below, *see "Plug-on Digi Channels", on page 22.* If a stand-alone digicom is being used program the digicom outputs as shown below, see "Digicom/RedCARE Outputs", on page 22.

Channel No	Output Type
3	005 (Alarm)
7	071 (Abort)
8	011 (Second Alarm)

2.
3. Program the "Abort Delay" timer to the required time (the default is 180 seconds), *see "System Timers", on page 27*.
4. Program the digicom channels so that they report the required signals.

Text Editing Keys

When programming any text the keys on the keypad function as shown below:

[1] A	[2] E	[3] I
[3] O	[5] U	[4] 0 (zero)
[7] Move cursor left	[8] Change case	[9] Move cursor right
[ENT] Accept text	[0] Space	[ESC] Abandon text editing
[A] Up the alphabet	[B] Change cursor	[C] Down the alphabet

Figure 1 Text Editing Keys

Cursor Types

[^] This is the normal text editing cursor. Use the text editing keys as shown above.

[|] This is the number cursor. Use the numbered keys 0 - 9 to enter numeric data.

Common Key Sequences

Character	Key Sequence	Character	Key Sequence
A	1	U	5
B	1A	V	5A
C	1AA	W	5AA
D	2C	X	5AAA
E	2	Y	5AAAA
F	2A	Z	5AAAAA
G	2AA	:	1CCCCCCC
H	3C	;	1CCCCCC
I	3	<	1CCCCC
J	3A	=	1CCCC
K	3AA	>	1CCC
L	3AAA	?	1CC
M	4CC	@	1C
N	4C	!	0A
O	4	"	0AA
P	4A	#	0AAA
Q	4AA	$	0AAAA
R	4AAA	%	0AAAAA
S	5CC	&	0AAAAAA
T	5C		

Setup New Users

The TS790/TS900 allows up to 31 users to operate the alarm system, each user is assigned a user type and a passcode. User 01 is the master user which has a default setting of 5678.

User Types

The following user types are available:

Master

User 02-31 can be programmed as the type "Master". If the installation company has programmed the master user for full access, he or she will have access to all user menus and options. If the installation company has programmed the master user for limited access, he or she will NOT have access to "User menu 2" options 6 and 8, and all of "User menu 3".

Standard

Users 02-31 can be programmed as the type "Standard". This user type can only access "User menu 1".

Holiday

Users 02-31 can be programmed as the type "Holiday". This user type allows the alarm system to be set and unset, and access to `User menu 1'. However, the passcode is automatically deleted from the system when a master user passcode is used to unset the alarm system. Normally the master user would assign this passcode type a temporary user whilst the they are away on holiday etc.

Set Only

Users 02-31 may be programmed as "Set Only". This user type allows the alarm system to be set and access to "User menu 1".

Reset Only

Users 02-31 may be programmed as "Reset Only". This user type allows 24hr alarms to be reset and access to "User menu 1" option 1 to 9.

Duress

Users 02-31 can be programmed as "Duress". When this user type is entered a silent "Panic Alarm" (i.e., Bell and sounders not triggered) is transmitted to the central station via the telephone line and remote signalling device (if fitted). The user will still be able to set and unset the alarm system and access "User menu 1".

☞ *All other user code types will generate a "Duress" alarm if the passcode is entered with the first two digits reversed (e.g., for a standard passcode of 2580 enter 5280 to generate a "Duress" alarm). If required, this feature can be disabled by the installation company or by making the first two digits of the passcode the same.*

PA Code

Users 02-31 can be programmed as "PA Code". When this user type is entered a "Panic Alarm"' is transmitted to the central station via the telephone line and remote signalling device (if fitted). The external sounder(s) and strobe light(s) are also activated.

Access

Users 02-31 can be programmed as "Access". When this user type is entered any output that is programmed as `Access' will activate for a pre-set time. Normally this user type is used in conjunction with an electric door strike connected to the alarm system so that when the passcode is entered the door strike is operated to allow the user access into that area.

Full Set Group

Users 02-31 may be programmed as "Full Set Group". This user type only allows the wards assigned by the installation company or master user to be set and unset. This user type does not have access to any user menus.

Code Set Group A

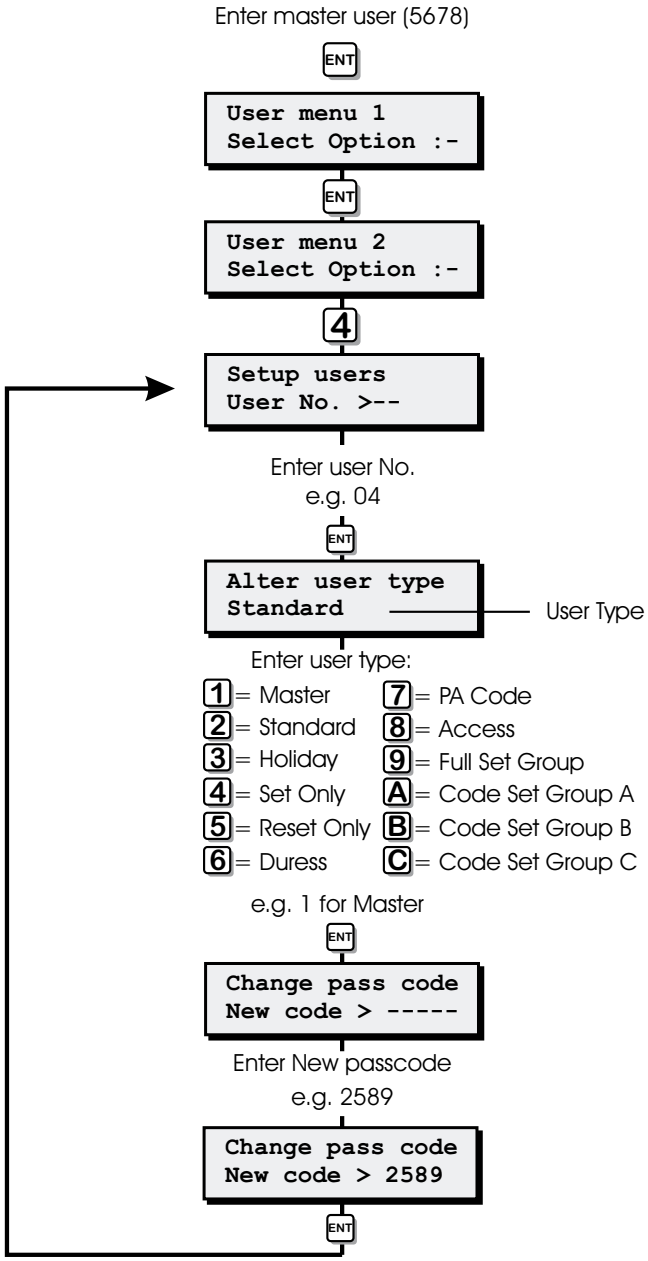
Users 02-31 can be programmed as "Code Set Group A". This user type only allows the wards assigned by the installation company or master user to be set and unset. This user type does not have access to any user menus.

Code Set Group B

Users 02-31 can be programmed as "Code Set Group B". This user type only allows the wards assigned by the installation company or master user to be set and unset. This user type does not have access to any user menus.

Code Set Group C

Users 02-31 can be programmed as "Code Set Group C". This user type only allows the wards assigned by the installation company or master user to be set and unset. This user type does not have access to any user menus.



Setup New Users Flowchart

Notes

Quick Reference Engineers Menus

Engineers Menu 1

key	Options	Page
1	**Program Panel Outputs** 1 = Panel Output 1 (relay) 2 = Panel Output 2 (-ve) 3 = Panel Output 3 (+ve)	22
2	**Program Digicom Outputs** 1 = Channel 1 5 = Channel 5 2 = Channel 2 6 = Channel 6 3 = Channel 3 7 = Channel 7 4 = Channel 4 8 = Channel 8	22
3	**Program Digicom Channels** 1 = Channel 1 5 = Channel 5 2 = Channel 2 6 = Channel 6 3 = Channel 3 7 = Channel 7 4 = Channel 4 8 = Channel 8	22
4	**Program Circuits & Attributes** **Circuit Types** **Circuit Attributes** 0 = Not Used 1 = Access 1 = Night 2 = D Knock 2 = 24 Hour 3 = Test 3 = PA Silent 4 = Omit 4 = PA Audible 5 = Reset 5 = Fire 6 = Monitored 6 = Auxiliary 7 = Entry 7 = Final Exit 8 = Chime 8 = Exit Term. 9 = Keypoint A = PSU - Battery B = PSU - Fuse C = PSU - Power	25
5	**System Timers** 00 = Test Call At 15 = Acc. Code Dur. 01 = No Rearms 16 = Modem Rings 02 = Settle Time 17 = P.I.D Alarms 03 = Pset Com Dly 18 = Ward Menu Dur. 04 = Exit time 19 = Test Call 05 = Entry Time 20 = 2nd Alarm Time 06 = Bell Dur. 21 = P.Set Codes 07 = Bell Dly 22 = Line Fault Dly 08 = 2nd Act Time 23 = AC Off Delay 09 = Test Time 24 = No. Rem Resets 10 = 2nd Entry 25 = Monitor Dur. 11 = Service Time 26 = Activity Dur. 12 = Payment Time 27 = P.Set Entry 13 = PSet Bell Delay 28 = Abort Delay 14 = Courtesy Dur	27
6	**Setting Modes** 0 = Full Set 1 = Final Exit A = Part Set A 2 = Exit Terminator B = Part Set B 3 = Timed Exit C = Part Set C 4 = Instant 5 = Deferred	30
7	**System Printout**	30
8	**Remote Reset Algorithm** Enter Algorithm number 004 - 199.	31

Engineers Menu 1

key	Options	Page
9	**System Configuration** **No. Yes No** 00 = Bell is an SAB Bell is an SCB 01 = User 1 Limited User 1 Unlimited 02 = Fire Signals All Fire Signals Set 03 = Silent 24hr Ccts Audible 24hr Ccts 04 = Enable Duress Disable Duress 05 = PA Silent PA Audible 06 = Set with LF Can't Set with LF 07 = User Reset Engineer Reset 08 = Tamp. Eng. Reset Tamp. User Reset 09 = Hi-Sec Engineer Lo-Sec Engineer 10 = OMs Minic OMs alarms 11 = Do Battery Test No Battery Test 12 = F.Exit Is Night F.Exit is Normal 13 = Audible T.Swicth Silent T.Switch 14 = Show P.Set Info Show Time Only 15 = Ans Phone defeat. Normal Answer 16 = Set with AC Off No Set with AC Off 17 = Loud Chime Normal Chime 18 = Invert O/P 1 Normal O/P 1 19 = Invert Digi O/Ps Normal Digi O/Ps 20 = Online Keypad No Online Keypad 21 = Restore PID PID Alarms Only 22 = User Authorised No Authorisation 23 = Mimic Alm & Flt Mimic Alarm Only	31
0	**Go To User Menu 1** 1 = Bell Test 2 = Walk Test 3 = Remote Reset 4 = Change Passcode 5 = Enable Chime 6 = Omit 24hr Group 7 = Omit Circuits 8 = Silent Set 9 = View Activity Count 0 = Full Set A = Part Set A B = Part Set B C = Part Set C	33
B	**View Location Text**	34
C	**Relearn**	34

Quick Reference Engineers Menus

Engineers Menu 2		
key	Options	Page
1	**View Circuits** A = Scroll Next Circuit C = Scroll Previous Circuit	36
2	**Set System Time** Enter time e.g. 1400 for 2.00pm	36
3	**Set System Date** Enter date e.g. 2804 for 28 April	36
4	**Change Passcode (Engineers)** Enter new passcode	36
5	**Chime Circuits** A = Scroll Next Circuit B = Toggle Chime / Silent C = Scroll Previous Circuit	37
6	**Alter 24Hr Group** A = Scroll Next Circuit B = Toggle Armed / Omitted C = Scroll Previous Circuit	37
7	**Print System Log** Enter Number of events and press ENT	37
8	**Configure Wards** Enter Circuit Number then press A = Ward A B = Ward B C = Ward C	37
9	**View System Log** A = Scroll Backwards B = Toggle Name / Circuit Text C = Scroll Forwards	38
0	**Reset User Code 1** Press ENT to Reset User 1 to 5678	40
A	**Start Call Back** 1 = Call Back No. 1 2 = Call Back No. 2 3 = Call Back No. 3 ENT to start Call Back	40

Engineers Menu 3		
key	Options	Page
1	**Time Switches** A = Time Switch A B = Time Switch B C = Time Switch C 4 = Off Time 1 5 = Off Time 2 6 = Off Time 3 0 = Manually Switch Output 1 = On Time 1 2 = On Time 2 3 = On Time 3 7 = 1st operates on 8 = 2nd operates on 9 = 3rd operates on	42
2	**Part Set Groups** Enter Group: A = Part Set Group A B = Part Set Group B C = Part Set Group C Select Wards: O = Ward S A = Ward A B = Ward B C = Ward C	43
3	**Code Set Groups** Enter Group: A = Part Set Group A B = Part Set Group B C = Part Set Group C 0 = Full Set Group Select Wards: O = Ward S A = Ward A B = Ward B C = Ward C	43
4	**Engineers Name** Use Keyboard to enter text	44
5	**Part Set Text** Enter Group: A = Part Set Group A B = Part Set Group B C = Part Set Group C Use Keyboard to enter text	44
6	**Circuit Text** A = Scroll Next Circuit B = Edit Text C = Scroll Previous Circuit	44
7	**Custom Text Menu** 1 = Reset Message 2 = Banner Message 3 = Location Text 4 =Printer Header 5 = Part Set Banner	44
8	**Node Outputs** Enter Node Output No. 0 - 9 then enter type	45
9	**Built In Tests** 1 = System Current 2 = System Voltage 3 = Circuit Resistance 4 = Digi Test	45
0	**View Activity Count**	46
A	**Custom Output A**	47
B	**Custom Output B**	47
C	**Modem Options** 1 = Call back No 1 2 = Call back No 2 3 = Call back No 3 0 = Reset Digicom 4 = Modem password 5 = Modem Site No 6 = Program Digicom	48

Quick Reference Engineers Menus

Programmable Output Types	
No.	Output Type
000	Bell On
001	Strobe On
002	Switch 12V
003	Detector Reset
004	Walk Test
005	Alarm
006	P.A.
007	Fire
008	System Set
009	Code Accepted
010	24 Hour
011	Second Alarm
012	Courtesy Light
013	Engr On Site
014	Ccts Omitted
015	Auxiliary
016	Ward A Armed
017	Ward B Armed
018	Ward C Armed
019	Ward S Armed
020	Tamper Fault
021	Line Fault
022	Mains Off
023	Exit / Entry
024	Test Fail
025	First Knock
026	Comms Failed
027	Comms Success
028	Comms Active
029	2nd Entry
030	Entry
031	Exit
032	Ward A Set Fail
033	Ward B Set Fail
034	Ward C Set Fail
035	Ward S Set Fail
036	Ward A Alarm
037	Ward B Alarm
038	Ward C Alarm

Programmable Output Types	
No.	Output Type
039	Ward S Alarm
040	Time Switch A
041	Time Switch B
042	Time Switch C
043	Access Code
044	General Fault
045	Battery Test
046	Service Call
047	System Full Set
048	Custom O/P A
049	Custom O/P B
050	PC output 1
051	PC output 2
052	Sounder Control
053	Service Required
054	Call Engineer
055	Never Active
056	Duress
057	System Part-Set
058	Battery Fault
059	Set Fail
060	Open/Close
061	ID Alarm
062	Random
063	Modem lockout
064	Sndr Control A
065	Sndr Control B
066	Sndr Control C
067	Sndr Control S
068	Chime
069	24hr Ccts Omit
070	Timed Output
071	Abort
100-155	Circuit Mimics 01-56
200-255	Circuit Alarms 01-56

Cooper Security Ltd.
Security House, Xerox Business Park,
Mitcheldean, Gloucestershire,
GL17 0SZ. England

Product Support Tel: +44 (0)1594 545556
Between 09:00 and 17:00, Monday to Friday.
Product Support Fax: +44 (0)1594 545401.
www.coopersecurity.co.uk

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